### ARCHITECTURAL RECORD



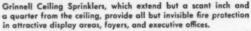
OCTOBER 1957

**BUILDING TYPES STUDY: HIGH SCHOOLS** 

## GRINNELL SPRINKLER **PROTECTION**

in two new units of Jordan Marsh Department Store, Boston, Mass.







Fire poses a constant threat to life and property. In a few moments of time, it can reduce to a tragic, smoldering ash the most modern edifice in the world. That's why so many buildings today include Grinnell Sprinkler Protection.

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ARCHITECTURAL RECORD (Vol. 122, No. 4, October 1957) is published monthly, except May 1957 when semi-monthly, by F. W. Dodge Corporation, 10 Ferry Street, Concord, N. H. Editorial and executive offices: 119 West 40th Street, New York 18, New York. \$5.50 per year in U. S., U. S. Possessions and Canada: Second-class mail privileges authorized at Concord, N. H.



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## liquid and lather soap dispensers

. . . The most complete and adaptable line on the market

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A number of Watrous soap dispensers are shown here — for wall or lavatory mounting. All deliver a measured quantity of soap . . . all are leakproof . . . all are designed with famous Watrous quality features which guarantee corrosion-free service.

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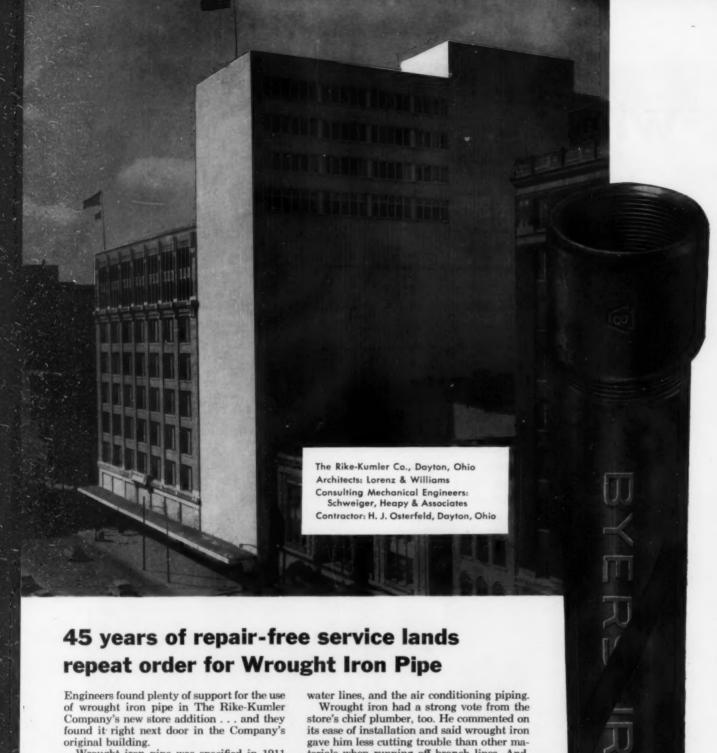
— Attractive horizontal and
push-down models. Clagfree service. Choice of
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### ARCHITECTURAL RECORD

October 1957 Vol. 122 No. 4

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COV ER; John Jay High School, Cross River, N. Y.; Kaschum, Ginå & Sharp, Architects; Joseph W. Molitve photo

#### **Building Types Study 251 — Schools**

A group of five high schools with quite extensive facilities, too extensive, according to recent critics of school architects. Here, however, the costs are given in detail, so that anybody can judge such questions for himself, and so that architects cannot be falsely charged.  "Schools and Architects Costs and Values." By John Knox Shear	173
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#### Interbau

A quick look at the International Building Exhibit in Berlin. By Robin Boyd  $\phantom{\Big|}$  20:

#### Hillside Bi-Nuclear

- A large house which reverses the traditional idea of making a house as pretentious as possible; this one works out the classic two-part idea to become as unostentatious and as informal as possible.
- The Gagarin House, Conn.; Marcel Breuer, Architect; Herbert Beckhard, Associate

### The Work of Edward D. Stone (Continued)

- Two Approaches to Hospital Design: The Horizontal Scheme and the Vertical Palo Alto Hospital and Stanford Medical Center, Palo Alto, Calif.; Edward D. Stone, Architect
- Central Hospital of Social Security for Employes (S.S.E.) in Lima, Peru; Edward D. Stone and A. L. Aydelott, Assoc. Architects

### American Architecture Designed for Export

27. By Seymour Howard

A third group of designs for embassies and other buildings for the Department of State, conceived of as visual expression of American thought. Thirteen projects by as many architects

#### Engineering

- Mexico City's Earthquake

  Tower Latino Americano. Adolfo Zeevaert, C.E., Chief Engineer, La
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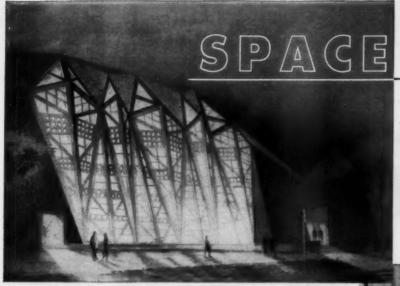
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### enclosed

'archi-structurally' makes this new church stand alone

Rendering shows giant abstract Biblical fish or whale form of church. Chancel, not shown, is at observer's left. Church is 234' long, 54' at its widest, and seats 670.

### Cathedral-Like Vastness Achieved by Wrapping Space in Pre-Cast Concrete

· Construction of the new First Presbyterian Church of Stamford, Conn. in which space is literally wrapped in precast concrete wall and roof elements that are selfsupporting, without columns, beams or lintels can perhaps best be described as 'archi-structural' - the shell or frame being both structural and enclosing.

Reinforced concrete wall and roof elements, factory-fabricated to closest tolerances, were trucked to the job site. Panel bottoms were

fastened to the footing, slanted panels being supported by false-work until roof panels were lowered into position, making the integrated wall and roof self-supporting. An eight-inch band of concrete connects the panels, resulting in a monolithic structure of great strength and rigidity.

The glass of inch thick amber, emerald and sapphire pieces was made in France from the templates of the triangular sections sent there for that purpose.

Dependable 'Incor'\* high early strength, used throughout this job, makes possible assembly-line precision in casting . . . faster form re-use, maximum production with minimum form investment. \*Reg. U.S. Pat. Off.



152 precast elements were used—80 triangles some perforated, others solid, and 72 solid quadrilateral panels-maximum sizes for panels 36 ft. x 10 ft.; for triangles 35 ft. on longest measure maximum weights: for panels 10 tons; for triangles 5 tons.



ociated Architects: HARRISON & ABRAMOVITZ New York City SHERWOOD, MILLS & SMITH Stamford, Conn.

THE DELUCA CONSTRUCTION COMPANY
Glenbrook, Conn.

PRECAST BUILDING SECTIONS, INC. New Hyde Park, N. Y.

Consulting Engin F. J. SAMUELY London, Englan

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than a sign to say "Welcome Travelers"

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The accommodations were thoughtfully, carefully planned. Recognizing the importance of personal com-fort, meticulous care was exercised in planning the bathrooms and choosing the fixtures . . . they're the finest . . . they're by Universal-Rundle.

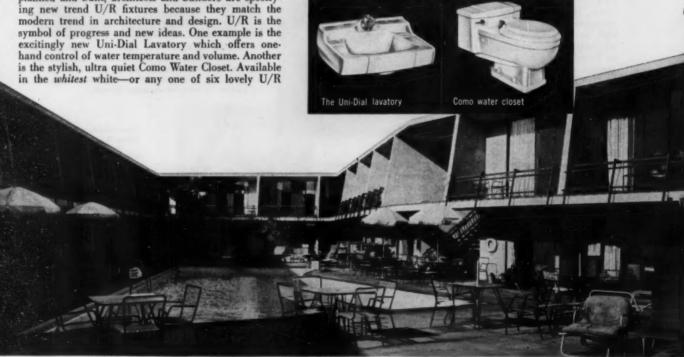
And so it is, wherever attractive bathrooms are being planned and built, architects and builders are specifyexcitingly new Uni-Dial Lavatory which offers oneis the stylish, ultra quiet Como Water Closet. Available in the whitest white-or any one of six lovely U/R

decorator pastel colors-the Como and the Uni-Dial are classic examples of beauty and durability by U/R... the quality pioneer for over 56 years.

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### THE RECORD REPORTS

### PERSPECTIVES

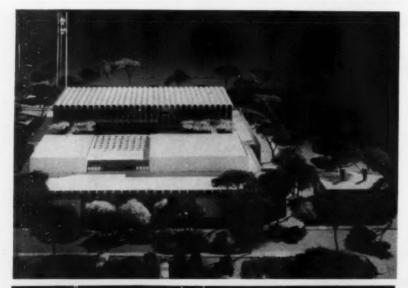
GIVE ME ENOUGH ARCHITECTS and I will give you Utopia," said Australian visitor Robin Boyd, writing in the English Architects' Journal, was the unofficial theme of the Centennial Convention of the American Institute of Architects last May. This was definitely not the theme of last month's symposium (see page 28) "The New Highways: Challege to the Metropolitan Region" sponsored by the Connecticut General Life Insurance Company in connection with the dedication of their new office building in suburban Bloomfield. Conn. The most specific reference to the potential contribution of architects to the solution of the problems under discussion was made in the opening address by Connecticut General President Frazar B. Wilde, when he listed the varied professions whose coordinated cooperation would be required: architects came sixth among 11 groups mentioned - tucked between geographers and lawyers in a list that started with engineers.

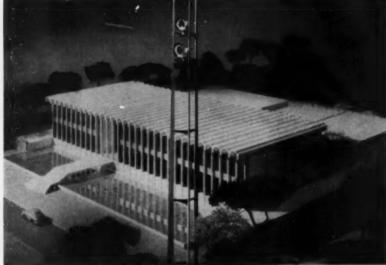
LETTER FROM A MAYOR: Jules A. Schweig, the Mayor of Clayton, Mo., writing to express his interest in John Knox Shear's talk at the Centennial Convention, was very conscious of architects. "I was very favorably impressed not only by Mr. Shear's talk but by the many major discussions held at this meeting during which so much was said about the problems concerning both our urban and suburban developments around the metropolitan centers of the country. This is particularly true because, as Mayor of the City of Clayton, which as you no doubt know is one of the major smaller cities contiguous to St. Louis, we have a great deal of urban rather than suburban development. I also have been connected with the building industry for the last fifty years. I have observed what effect the lack of proper planning has had on the deterioration of many areas. I think it very essential that the architects in general become

aware of many of the problems that they are helping create. In their desire to meet the wishes of their clients or the owners they too often add to our traffic problems, they too often do too little about the parking problems they are creating. They also often design buildings that are entirely out of keeping with the area in which the building is being erected. How much they can do to prevent many of the home builders from building the future slums it is difficult to say because in many instances the builder controls the layouts of many of these new sections rather than the architect. It is always difficult to get all segments in the industry to agree to what is the proper planning for the future. Although much has been said about careless or unintelligent planning by many groups, including the American Municipal Association, it seems difficult to convince many who have not lived long enough in one area to note the changes that have taken place that have caused such a tremendous economic loss and deterioration in many of our communities. Everything that is done to make the architect more aware of his importance in the future planning for our metropolitan centers will help to avoid repeating many of the errors of the past."

THE BIG QUESTION: The Journal of Housing, official publication of the National Association of Housing and Redevelopment Officials, had an editorial a while ago which might have been addressed to architects - although, in fact, architects were not mentioned. It was a short editorial, titled "The Esthetics of City Rebuilding," and it ran as follows: "Great gaps in the skyline are opening up in cities all over the country as the urban renewal program gathers momentum. Old landmark buildings are coming down in city centers. Old residential neighborhoods, heavy with the memory of several generations of family living, are being

ripped open - and sometimes emptied. Churches, stores, restaurants, small businesses, all types of institutions with links to the past are falling under the demolition boom. To achieve this leveling operation, the men and women behind the urban renewal movement have spent years developing the needed laws, financing formulas, and administrative machinery. Now the big question is - are we prepared to rebuild the skyline; rebuild the neighborhoods; rebuild the shopping centers, church squares, parks and playfields - and do it up to high esthetic standards? Do we have the artistry, the imagination, the understanding of people, the perception of urban values that will make our rebuilt cities real tributes to this era? In short, is there an art of city building that should be applied to the re-building job? Cities of the past have been able to stir all kinds of creative effort - by painters, poets, philosophers, political leaders. In spite of their noise, confusion, dirt and desolation, cities have captured the love and loyalty of millions of people. What are the spiritual qualities of a city, what are its physical characteristics that appeal to the emotions, give delight to the eve, develop great creative movements? The men and women who are concerned with today's urban renewal drive - having worked through the legal, the financing, the operating phases of the program, must face these new questions of philosophy and esthetics. The real test is still ahead . . . and we have only begun to question whether there is an art of urban design and, if so, how we can apply it to the day-today decisions that are being made in urban renewal. If we do not find the answers soon, all of the millions of dollars that are going into the current program and all of the deep disruptions that are being created by today's demolition will stand as monuments of waste and failure." . . . Do architects have any answers?





Radio and television facilities for the Columbia Broadcasting System's St. Louis outlet, KMOX-AM-FM-TV, have been designed by Minoru Yamasaki of the firm of Yamasaki, Leinweber and Associates. The building, to be ready for occupancy early in 1959, will be located on a three and a half-acre Oakland Avenue site overlooking Forest Park. There will be two studios each for radio and television, a total of 52,000 sq ft

FOR CITY AND COUNTRY: TWO PROJECTS FOR CBS



This new research center on an 11-acre site in Stamford, Conn., initiates plans of the Columbia Broadcasting System for expansion of its electronic research operations. The Stamford Laboratories, to be ready for occupancy next summer, have been designed by Gordon Bunshaft of Skidmore, Owings and Merrill. The onestory air conditioned structure of aluminum, steel and glass will provide research and development facilities for a scientific and administrative staff of 150 persons in an area of 33,000 sq ft. There will be an open-air court in the center of the building. Estimated cost is "in excess of \$1,000,000"

### A PROPOSED DESIGN FOR CREATIVE PRESERVATION





To provide for San Francisco's beloved old Ferry Building a setting appropriate for such a civic landmark despite the construction of a two-deck state freeway directly in front of it, architect Mario Ciampi and his associate Allyn Martyn have proposed this development. It was designed to be complementary to the already projected Golden Gateway redevelopment area (slightly to the north) designed by Skidmore, Owings and Merrill. The proposal is to remove both wings of the Ferry building, leaving the familiar tower as the landmark, and putting a park on either side of it - one a marine park with a pier for passenger liners at one end and a World Trade Center Building at the other and between them a circular pier where historic ships would be moored, a ferry slip, a small-boat landing pier, and a heliport; the other a landscaped area at the fool of Market Street between access ramps for the freeway and the Golden Galeway project. Cost is estimated at \$100 million, most of which would come from private developers who would acquire property in the area and build apartment and office buildings. Cost of the Golden Galeway project, to redevelop San Francisco's Produce District, is estimated at \$180,000,000



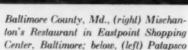
### THE RECORD REPORTS

### BUILDINGS IN THE NEWS

(Continued from page 11)



WILSON & CHRISTIE, Architects. The firm's four prizewinners—above (left) Fire Department Facilities, Towson,





& Back River Railroad Company Offices, Sparrows Point, near Baltimore, (right) Stable at Goucher College, Maryland







JURY (sealed) were Alfred Clauss, A.I.A., Philadelphia; John Scarff, Baltimore; John Stenhouse, A.I.A., Washington, D. C. Standing: Association officials Clark S. Hobbs and (president) Harrison Garrett

### FOUR AWARDS TO ONE FIRM FOR FOUR TYPES

The Seventh Biennial Baltimore Association of Commerce Architectural Awards Contest derives a special interest from the fact that of eight award winners (all shown on this page) four were the work of one architectural firm and furthermore all four represented building types new to that firm with the premiated projects. Entries in the

competition, more than 60 in number, included industrial and residential as well as commercial and public buildings. All, according to the rules of the contest, were constructed in 1955 and 1956. They were judged on "exterior design, suitability of exterior design to use, artistic and practical use of materials, adaptability to site and neighborhood."



SMITH & VEALE, Architects — Dumbarton Junior High School, Baltimore County, Maryland





Left: FISHER, NES, CAMPBELL & ASSOCIATES—The Mall, Mondawmin Shopping Center. Center: TAYLOR &



FISHER — Auditorium, Gilman School. Right: COCHRAN, STEPHENSON & WING—Flag House Courts (all Baltimore)

(More news on page 16)

### **VAPOR HAS CAUSED MORE DAMAGE THAN FLOODS!**

Like a cancer, the growth of the fungus which

causes timber rot, continuously undermines the "health" of the house. This growth is promoted by condensed vapor. Condensation also promotes peeling paint, stained plaster, damaged mortar and masonry, warped flooring. More aggregate damage has been caused to buildings by vapor than by floods. Normal living routines in a home; washing, drying, cooking; or the presence of many people breathing and perspiring in markets, churches, theatres, create large quantities of vapor. When warm, vapor-laden air touches cold inner surfaces of roofs and exterior walls, much of it condenses, and causes damage. How can the flow of vapor into wall and ceiling spaces be retarded? How can one accelerate the escape of evaporation of driven rain, leaks, dampness, and other water from building spaces? CONTINUOUS VAPOR BARRIER OF METAL A simple answer has been found by many architects and builders. Exterior walls and roofs, compared with almost impervious metal, have greater vapor permeability than the required minimum 5 to 1 ratio. When vapor pressures build up in wall and ceiling spaces, the vapor flows out (harmlessly), following Nature's Law that gases flow from areas of greater density to those of less density. It cannot back up through impervious, continuous metal. Scientific continuous, multiple aluminum and air spaces also minimize condensation formation; and drastically retard heat as well as vapor flow. Have you read the U. S. NATIONAL BUREAU OF STANDARDS brochure: "Moisture Condensation in Building Walls"? It discusses vapor and heat flow, and gives vital facts on the causes and prevention of condensation. If you use the coupon, you'll get a copy at our expense. THERMAL VALUES, INFRA INSULATION TYPE 4S Up-Heat C.105°=3%" non-metallic insulation†
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†Calculated on basis of limiting thermal values cited
in Fed. Specs. LLL-f-321b; HH-I-585; HH-I-521c; HH-I-551a. Cost installed between wood joists, material and labor, about 8¢ sq. ft. Infra Insulation, Inc., 525 Bway., N. Y. C. Dept. R10 Send "Moisture Condensation in Building Walls."

## Stretch Budgets for Church with Janitrol





Heating and cooling for this church is handled by three Janitrol Duct Furnaces, combined with a 60-ton cooling system. Janitrol Duct Furnaces are especially designed for use in combination systems ... save money by using same blowers and ducts as cooling system.

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Janitrol's complete line of equipment for new construction and modernization includes units for virtually every church heating and cooling requirement... with unusual flexibility of installation. Whether the job calls for a compact central system, multiple

### winter conditioners adaptable for summer cooling

... with installation of Janitrol's new air-cooled cooling system that uses no water, eliminates water service and maintenance costs. May be installed concurrently with winter conditioner, or any time later, without additional ductwork.

## Building and Modernization Heating and Air Conditioning







Separate central systems to heat upstairs and downstairs rooms were installed in this church modernization job. The ultimate in a compact, efficient, automatic installation was achieved with Janitrol gas heating equipment.

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Janitrol gas unit heaters work independently of central system to heat large gymnasium... provide fast, low-cost heating and temperature control required by the varying activities program. Janitrol unit heaters are designed for dual-fuel operation, save floor space, insure low maintenance costs.

units, or a combination of both, Janitrol brings you welcome design freedom!

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as well. And thousands of Janitrol installations testify that Janitrol quality means toplevel comfort, with important savings in operating and upkeep costs.

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### DANISH ARCHITECTURE: MODERN RESPECTING ITS HERITAGE

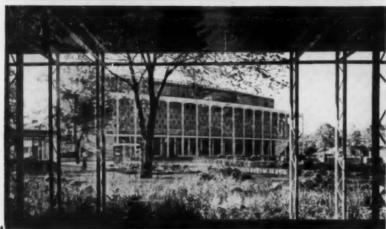
A new exhibit of contemporary Danish architecture has been organized by Prof. Kay Fisker of the Royal Academy of Copenhagen for a tour of the United States sponsored by the Danish Embassy and arranged by the Traveling Exhibi-

tion Service of the Smithsonian Institution. The exhibition includes drawings and photographs of 36 recent projects by 27 Danish architects as well as an introduction providing a glimpse of the historical background of Danish architecture. For the illustrated catalog published in connection with the exhibition, Professor Fisker has written a thoughtful introductory essay:

"Denmark is a small and simple country and the Danes are a rather (Continued on page 330)





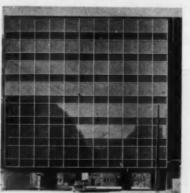




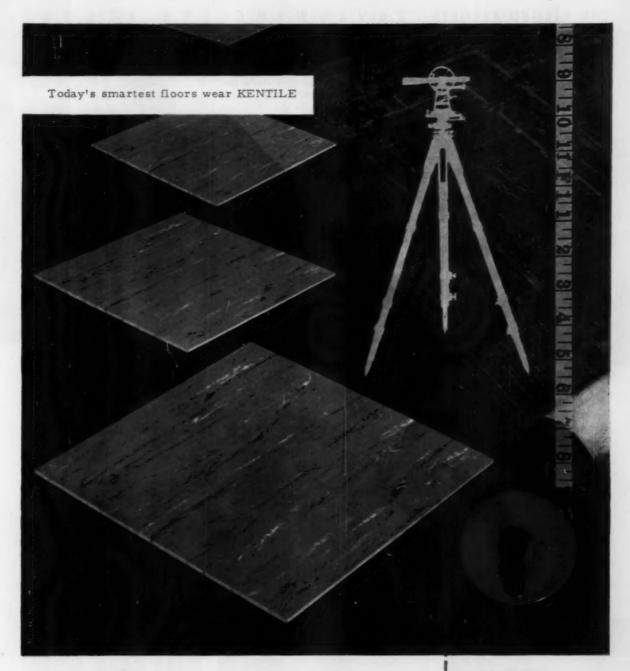
#### AMONG PROJECTS IN EXHIBIT:

1. One-family house, Jaegersborg; Eva and Nils Koppel, architects. 2. Maternity Aid Institution, Copenhagen; Kay Fisker, architect. 3. Concert Hall in Tivoli, Copenhagen; Hans Hansen and Frits Schlegel, architects. 4. Grade School, Copenhagen; F. C. Lund and Hans Chr. Hansen, architects. 5. Row Houses, Bagsvaerd; Jorgen Bo and Knud Hallberg, architects. 6. Office Building, Copenhagen; Arne Jacobsen, architect





(More news on page 16B)



### This is KENTILE' Solid Vinyl Tile

... the flooring that's the utmost in elegance! It's easier to clean--wears longer--with deeper, richer colors than any other kind of tile!

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available in Solid Vinyl, Vinyl Asbestos, Cushion-back Vinyl, Asphalt, Cork and Rubber tile ... over 150 decorator colors!

#### SPECIFICATIONS

SIZE: 9" x 9"

THICKNESSES: 5/64", 1/8"

COLORS: MARBLEIZED

Standard -- 12 Decorator -- 8 (including solid black, white)

TERRAZZO

Regular -- 8 De Luxe -- 7

Decorator -- 7
WOODGRAIN -- 3

### **EDUCATION: THE CONSTANT CONTROVERSY**

Some discussion revolved around the subject of American architectural education, in its formal aspects, in the early 19th century when Charles Bulfinch proposed to Harvard that it establish a course in architecture — and was turned down on the grounds that this "ornamental and useful art" could scarcely be called a scholarly pursuit. The controversy doubtless continued when William Ware was establishing this country's first architectural course at M.I.T. And it has certainly continued to flourish since the Record's founding, with many writers and many opinions filling its columns in the six and a half decades.

The chief point of discussion — at least since the Record was founded, and probably since the days of the Babylonians — has been the proportional importance of practical vs. esthetic considerations in the molding of the student. In the early part of this century, the conflict was carried on by the Beaux-Arts, or esthetic, forces, quite well established in the American schools, and what might be called the American, or practical, forces, who wanted liberation from the "pernicious" French influence.

As early as 1895, Henry R. Marshall was making mild objections to the Ecole des Beaux Arts system, its chief faults, he felt, being its emphasis on two-dimensional design and to the atelier system ("The atelier system in vogue in connection with the Paris Ecole has great advantages in this matter of personal influence by the master upon the student; but such a system is of course only valuable where the head of the atelier is a man of wide practical experience and of acknowledged artistic ability").

Another sore point among would-be reformers was the "mention" system —

credit given in competition among the students. In July 1900, Percy Stuart quoted no less a person than Professor Ware on the possible ill effects of the method: "The trouble with mentions is that unless they are distributed pretty freely, so that they lose their meaning, they help only the men whose training or special facility gives them the best start, and demoralize and discourage less fortunate but equally deserving and sometimes equally capable men."

One of the most vocal members of the fraternity asking for American schools in the U.S., by virtue of his strength of feeling, was J. Stewart Barney, an architect who had practiced here before entering the Ecole. What he saw in Paris appalled him. Most upsetting, he felt, was the cavalier attitude of the patrons of the ateliers to basic conditions of site or use, and the dilettante-ish approach to design. "I think I am right," he said, "in saying that the student of the Ecole des Beaux Arts is taught to plan with his eyes. He uses a very soft pencil, or, preferably, a piece of charcoal. With this on a small piece of paper he spins and spins and spins in concentric circles until he has covered the entire paper with a soft gray tone of interlacing lines. These he smears occasionally with his fingers, and in this shadowy uncertainty his quick and trained imagination sees or devises a form which his experience has shown will be considered good. He then forces the conditions which govern the problem to fit this beautiful form. By the process of proportioning the different parts of his plan he claims to arrive at a solution, and by means of his power of indication he renders the whole pleasing to the eye. . . . . It is surely the chief part of an architect's duty to produce an artistic



AP April June 1894

"La Charrette," an impression in 1903

solution of a given set of practical and other conditions; but, after all, a plan must be a real plan, a real arrangement of apartments, suited to meet actual requirements. His real business is not at all with the drawings, no matter how beautifully made, but with buildings and their arrangements. Why reverse the process and give not even the drawings, but the execution of the drawings, the paramount consideration?"

Mr. Barney's views did not go unopposed, of course; Paul Cret's rebuttal in the May 1908 issue of the Record was so overwhelmingly in favor of the Beaux Arts system that Barney felt obliged again in December to categorize the shortcomings of the school—"It will be necessary to show: That the watchword of the Ecole des Beaux Arts is precedent. That false indication, false judgment and false design are more fre-

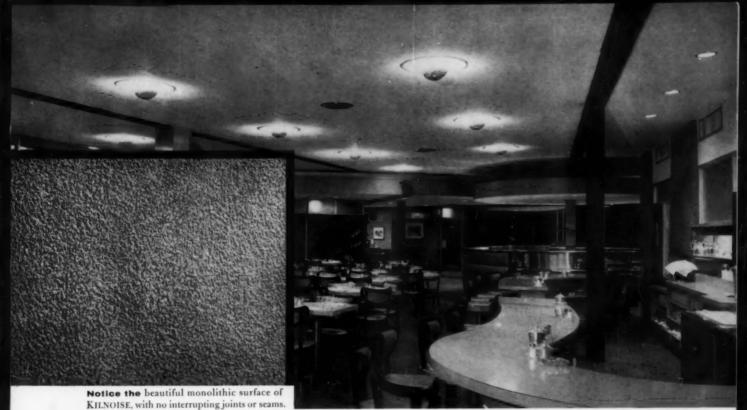
(Continued on page 364)



Left: "Design for the Embassy of the United States in London," by a Harvard

student. Right: study of "An Ionic Porch," by a first year student at Columbia





### Silver Springs at Ocala, Florida. Architect: Victor A. Lundy, A.I.A., Sarasota

## Unspoiled beauty with KILNOISE ACOUSTIC

WHEN KILNOISE Acoustic Plaster was chosen at fabulous Silver Springs for its superior sound-absorption qualities, it also paid a big bonus in beauty.

Unmarred by joints, lines or seams, the natural soft white color of the KILNOISE ceiling surface offers interesting eye-appeal while creating a pleasant air of spaciousness.

Completely unaffected by moisture, KILNOISE is used both indoors and outdoors at this well-visited Ocala, Florida, resort. The operators of Silver Springs are pleased, too, with the remarkably low maintenance cost of KILNOISE. Just a soft brush has been needed occasionally to keep it white and clean.

For functional beauty, excellent sound-absorption, high light-reflectivity, low maintenance, fire-retardance and moisture-resistance, KILNOISE Acoustic Plaster is unsurpassed by any acoustical material whatsoever.

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Simply make a tracing of your design if you wish to highlight wide expanses of either wall or ceiling plaster...plaster craftsmen do the rest.



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division of Basic Incorporated BOX 33 845 HANNA BUILDING CLEVELAND 15, OHIO Increased Sound-Absorption—Many thousands of tiny interconnected pores render KILNOISE highly sound-absorbent. Stippling and random-perforating the surface provide a high noise reduction coefficient of .60.

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Maintenance—KILNOISE acoustic plaster sets monolithically with a hard, durable surface which can be painted (with a water base paint) repeatedly without materially reducing its sound-absorption qualities! This surface can be kept constantly attractive by quick, easy cleaning.

More Light Reflectivity—KILNOISE provides light reflection excelling that of most other acoustical materials. This furnishes an extra margin of safety where proper lighting has become an increasingly important factor.

Higher Moisture Resistance—Wherever humidity is high, other materials may crumble, rust, stain or warp. But KILNOISE is impervious to moisture, making it the ideal ceiling for swimming pools, bathrooms, laundries, shower rooms and other high-humidity areas.

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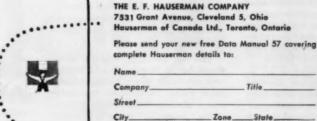
Movable Hauserman Interior Walls This handsome private office is representative of the striking designs that are made possible by the creative use of Movable HAUSERMAN Interior Walls. An endless selection of colors, a wide choice of clear or obscure glass patterns and a full range of modular components are available. HAUSERMAN Walls present the architect with a new design medium as functional and attractive for interiors as curtain wall is for exteriors.

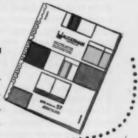
HAUSERMAN Walls also offer the architect other, more tangible benefits. Expensive drafting room time is cut to a minimum, because HAUSERMAN provides detailed working drawings. Time-stealing field supervision is also drastically reduced. With HAUSERMAN as a subcontractor, there is just one source of supply for interiors, so the need to coordinate the activities of several trades is eliminated.

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### MOVABLE HAUSERMAN INTERIORS

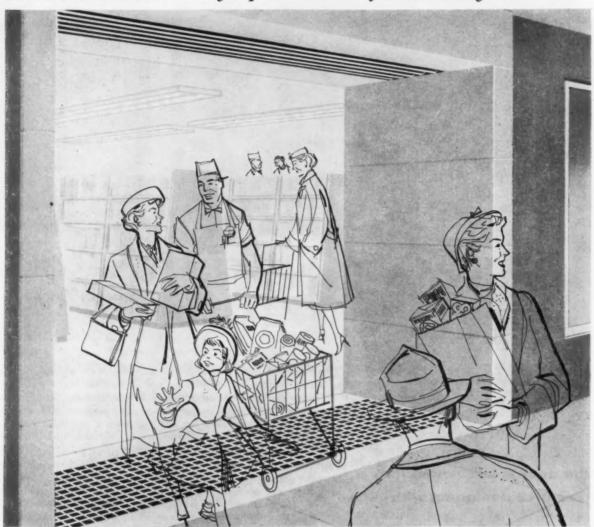
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creates unlimited design possibilities for building entrances



### OPEN TO TRAFFIC-CLOSED TO WEATHER

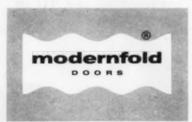
MIRACLE and MAGIC are overworked words, but they certainly apply to MODERNFOLD'S new AIR DOOR...the door that isn't there...the door that reduces heating and cooling costs... the door that provides accident-free entrance and exit...the door that eliminates traffic jams...the door that adds beauty to any type of architecture.

MODERNFOLD'S AIR DOOR is an insulating wall of moving air, directed downward in a continuous stream from overhead vents, and into a floor grating. It is then filtered, cleaned, heated and returned to overhead vents to re-

peat the cycle—and in the process, it keeps out heat, cold, dirt, dust, wind, pets, insects, rain and snow.

Best of all, the AIR DOOR is customengineered and pre-assembled into convenient units for simple, practical installation.

The AIR DOOR is ideal for stores, shops, banks, hotels, office buildings—and any other heavy traffic entrance. Send today for detailed information about MODERNFOLD's magical, miraculous ("scientific" is really the word) new AIR DOOR.



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Manufacturers of Folding Doors, Air Doors, Shower Enclosures, Vinyl-coated Fabrics and Peabody School Furniture. In Canada, New Castle Products, Ltd., Montreal 23.

### The State of Construction

F. W. Dodge Corporation reported a decline in the total of contracts for future construction in the U. S. recorded in July; but the decline, only four per cent under the level for July 1956, was not enough to cancel earlier 1957 gains and the cumulative total for the first seven months of the year was three per cent above the figure for the same period last year. July contracts for residential building showed a 13 per cent increase over the July 1956 figure, but nonresidential contracts were down 11 per cent. For details, page 404.

### Architectural Schools Studying Housing Costs

With the cooperation of the deans of the six architectural schools in the state, the New York State Division of Housing is embarking on a research program aimed at future savings of \$1000 per dwelling unit in both public and private multiple-unit housing. State Housing Commissioner Joseph P. McMurray has conferred with the deans and with leaders in the fields of architecture, engineering, materials manufacturers, building contractors and labor leaders to launch a "three-pronged program" attacking the problem of high housing costs, a program for which a \$30,000 appropriation was recently made available by the Legislature. The first phase of the program will be assumed by the architectural schools, where six separate studies will investigate possibilities for cutting

costs through (1) more imaginative planning and (2) use of new materials and new methods of construction. In the second phase, an advisory panel composed of architects, engineers, builders, building suppliers and labor representatives will consider possibilities based on their actual experience in the construction field, and under a contract with Pratt Institute will meet with faculty members of that institution to discuss their findings, which will, finally, be consolidated in a report to be prepared by Pratt. The third phase of the New York effort will be conducted in cooperation with the National Institute for Architectural Education, which will conduct nationwide competitions in the schools of architecture at the undergraduate level. Prizes will be awarded for a design of a typical apartment, for a typical suburban housing structure and for a complete housing project for an urban area.

#### **PC Launches Seminar Series**

A new series of one-day technical seminars was inaugurated by the Producers' Council last month with a session, in Dallas, on curtain walls. Some 40 towns throughout the country will have similar sessions on various subjects of interest to architects, engineers, building contractors, building code officials and, of course, building materials producers. Plastics, acoustics and modular measure are already scheduled for such seminars by local sponsoring chapters of the

Council. Speakers will be research and development people from participating organizations.

### **Professional Engineers Elect**

Garvin H. Dyer has been elected president of the National Society of Professional Engineers. Mr. Dyer, director of the Missouri Water Company and man-

ager and chief engineer of the Independence Division of the firm, succeeds Robert J. Rhinehart of Pine Bluff, Ark., in N.S.P.E.'s top post. He is a past president of the Missouri Society



of Professional Engineers, an honor member of Chi Epsilon, and past president of the Mid-Missouri Section of the American Society of Civil Engineers.

#### Worth the Winning

An international architectural competition for the construction of the Mausoleum of Oaide-Azam Mohammed Ali Jinnah, Karachi-Pakistan, has been announced by the Central Committee of the Qaide-Azam Memorial Fund, consisting of the President and the Prime Minister of the Islamic Republic of Pakistan and a consulting engineer. Khan Bahadur Mohammed Solaiman. The competition, open to all architects, engineers and town planners of the world, is being conducted for the sponsors by and under the standard regulations of the Union Internationale des Architectes (15 Quai Malaquais, Paris VI) and closes October 31. . . . A competition for an International Monument at Auschwitz, in memory of those who perished in the infamous Nazi concentration camp, is under way under the auspices of the International Committee for Auschwitz (Weigandhof 5, Vienna X, Austria), with the technical assistance of the U.I.A. The first phase of the two-stage competition, open to "all artists of all countries," closes March 15, 1958. . . . Applications for the 1958 Arnold W. Brunner Scholarship will be accepted by the New York Chapter of the American Institute of Architects (115 East 40th Street, New York 16, N. Y.) until November 15. The grant is for an amount up to \$2400 "for advanced study in a specialized field of architectural investigation."

(Continued on page 24)



— Drawn for the Record by Alan Dunn
"I'm sure people we know don't have thermal lag —"

when seconds count...





### FIRE STATIONS COUNT ON RO-WAY DOORS

The alarm clangs! The engines roar into life and these Ro-Way doors get out of the way fast—electrically. The fire-fighters are on their way in seconds.

Fire stations the country over depend on Ro-Way overhead type doors for instant action, smooth operation, rugged dependability. And these qualities find ready acceptance for warehouses, commercial garages, freight terminals, service stations and other commercial and industrial applications.

Ro-Way sectional doors are engineered for long life. Built of selected lumber and Masonite® Dorlux® panels. Glued and steel doweled mortise and tenon joints give added strength. Seal-A-Matic hinges and

Taper-Tite tracks lock out even the worst weather yet permit instantaneous opening—fast, quiet operation on ball bearing rollers . . . all the work done by big, Power-Metered springs. Heavy-gauge hardware resists rust and corrosion because it's both Parkerized and painted after fabrication in Rowe's factory.

There are Ro-Way models for all commercial, industrial and residential buildings . . . standard and special sizes to meet any design problems.

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Complete details, drawings, etc. on the entire Ro-Way line. A big help in selecting the right door. Ask for manual 55.

### there's a Rō-WAY for every Doorway!

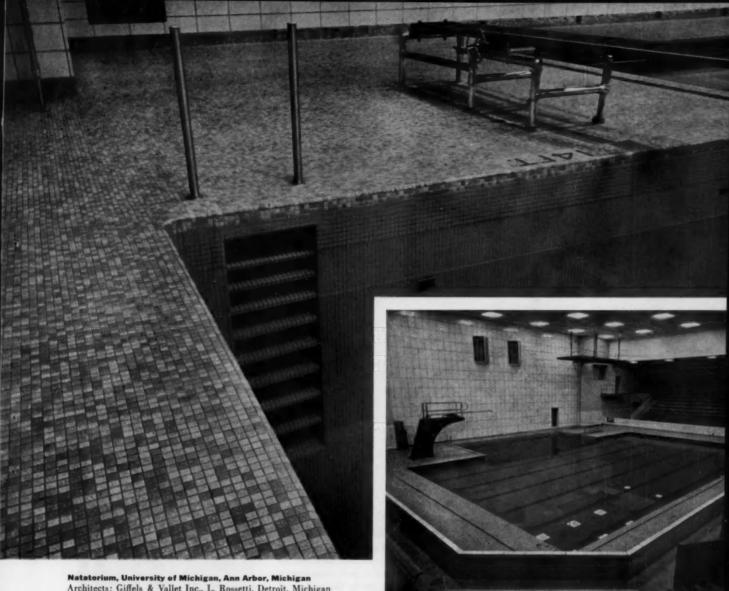


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### Architects: Giffels & Vallet Inc., L. Rossetti, Detroit, Michigan Tile Contractor: The C. J. Page Tile Company, Detroit, Michigan

### Romany-Spartan Tile sparkles

### in new exhibition pool

Here, at the University of Michigan, is an outstanding example of forward thinking in competitive pool planning. Nothing has been overlooked in making this installation the country's finest. Its unique design-with the diving area adjoining, but outside the main tank-makes possible its uniform five-foot depth throughout the entire six-lane course. Both beauty and permanence were achieved through the use of Romany Spartan small unit tile for runway and tank lining.

From natatorium to auditorium, classroom to kitchen . . . Romany · Spartan's wide range of colors, sizes and shapes, glazed and unglazed, offers tile for every purpose. For design help or information, call your nearby Romany. Spartan representative. United States Ceramic Tile Company, Dept. R-15, Canton 2, Ohio.



Tile Council of America The Producers' Council, Inc.

### THE RECORD REPORTS

### MEETINGS AND MISCELLANY

(Continued from page 21)

. . . Rome Prize Fellowships for 1958-1959 are offered "for mature students and artists capable of doing independent work in architecture, landscape architecture, musical composition, painting, sculpture, history of art and classical studies." Fellowships, awarded "on evidence of ability and achievement," are open to U.S. citizens for one year beginning Oct. 1, 1958, with a possibility of renewal. The stipend is \$1250 a year, plus round trip transportation between New York and Rome, studio space, residence at the Academy and an additional travel allowance. Special research fellowships, offered only in classical studies and art history, carry a stipend of \$2500 a year and residence at the Academy. Applications and submissions of work are due by December 31; queries should be addressed to the Executive Secretary, American Academy in Rome, 101 Park Avenue, New York 17, New York. . The Rubber Flooring Division of the Rubber Manufacturers Association is holding a Rubber Floor Design Awards Competition to be sponsored by the eight member companies of the Association and one other rubber flooring manufacturer. For the best-designed rubber floor installed in an institutional or commercial type building in the



New York State's new research program to find ways of cutting housing construction costs has enlisted the aid of architectural educators throughout the state, including officials of the National Institute for Architectural Education, who will conduct a series of nationwide competitions open to students at all U.S. architectural schools and aimed at focusing student attention on the problem. Shown above: New York State Housing Commissioner Joseph P. McMurray; Joshua D. Lowenfish, chief of architectural research for the State Division of Housing; Chairman Sidney L. Kalz, N.I.A.E. Competitions Committee; and Giorgio Cavaglieri, N.I.A.E. Board of Trustees chairman



period Jan. 1, 1957 to Dec. 31, 1957, the competition offers a Designer's Award of \$1500 and an Installer's Award of \$500 as well as six honorable mentions. The competition is open to architects, professional designers, decorators and floor installers within the continental United States. Judges will be Leon Chatelain Jr., president of the American Institute of Architects; Marc T. Nielson, president of the American Institute of Decorators; and John Knox Shear, editor in chief of ARCHITECTURAL RECORD. Oueries should go to: Rubber Floor Design Awards Committee, Rubber Flooring Division, The Rubber Manufacturers Association, Inc., 444 Madison Ave., New York 22, N. Y.

#### News from the Campus

University of Washington in Seattle has announced its School of Architecture has been given status as an autonomous college, to be known as the College of Architecture and Urban Planning. Prof. Arthur P. Herrman, who had been director of the School of Architecture, has been named acting dean of the new College. . . . Rensselaer Polytechnic Institute of Troy has reorganized its architecture program in a School of Architecture and has named Harold D. Hauf, chairman of the "Architectural Group" under the old setup, as dean of the School. . . . Washington University in St. Louis has appointed Joseph R. Passonneau dean of the School of Architecture. Dean Passonneau, former chief of design for the Tennessee Valley Authority, joined the faculty in 1955 as a design critic in architecture and had been acting dean for the past year. . . . Wells Bennett, professor of Architecture and dean of the College of Architecture and Design at the University of Michigan, has retired at the age of 69 after 45 years at the University. He had been dean since 1937.

Frank Lloyd Wright found time amid the multifarious activities of a summer that had him accepting commissions—and visiting—at such widely separated locales as Baghdad and Marin County, Cal., to reaffirm, in a TV interview on "RFD Chicagoland," his faith in a return to pastoral living as a solution to the social problems of an urban era. Model shown on the program (and in photo at left) was of farm building designed in the 'twenties



Paul Nelson, American-born architect long a resident of France, is teaching in the School of Architecture of Pratt Institute as visiting professor beginning this term. Mr. Nelson, remembered here for his 1938 "Suspended House," was the chief architect for the Memorial Hospital in Saint-Lo, opened in 1956. He has a 1957 Graham Fellowship



Michigan Society of Architects' committee for the restoration of the Biddle House had a conference with Governor G. Mennen Williams on the site of the 1797 landmark during the Society's midsummer meeting at Mackinac Island in August. Shown above: Talmage Hughes, Society's executive secretary; Paul Marshall, Detroit; Adrian N. Langius, director of State Building and Construction Division and committee chairman; Walter Sandrock, U. S. Plywood Co., Detroit; Warren L. Rindge, Grand Rapids, architect for the restoration; Governor Williams; Roger Allen, Grand Rapids; Marvin J. Brokaw, F. W. Dodge Corp., Detroit, committee's executive chairman; J. R. Kates, of M.S.A. Bulletin. Architects are spearheading drive for restoration, soliciting funds from entire construction industry in Michigan; house will be deeded to state after restoration program is completed

(More news on page 28)



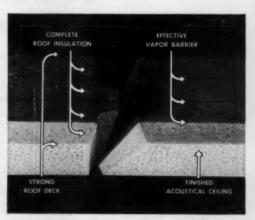
Here's a new, low-cost vay to sound-condition light commercial structures. No suspended ceiling is required. No further acoustical installation is necessary,

### This new Armstrong Cushiontone Roof Deck sound-conditions open beam interiors

New Armstrong Cushiontone Roof Deck is a 4-in-1 material that provides roof deck, insulation, multiple vapor barriers, and finished acoustical ceiling in one fast, simple application. It needs only beams to support it and built-up roofing to weatherproof it.

New Armstrong Cushiontone Roof Deck is made up of ½" layers of asphalt-impregnated fiberboard. The interior surface is prefinished with two coats of washable white paint. Perforated in the popular Full Random design, it absorbs more than half the noise that strikes the ceiling surface. Cushiontone Roof Deck is available in easy-to-handle 2' x 8' panels, 2" or 3" thick, with sturdy T & G joints on all four sides.

Send for free twenty-four-page booklet, "How to build with Temlok Roof Deck." It shows you how you can add the beauty of open beam interiors to motels, gift shops, restaurants, and other types of light commercial buildings. Write to Armstrong Cork Company, 3910 Rock Street, Lancaster, Pennsylvania.

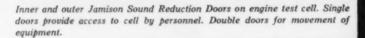


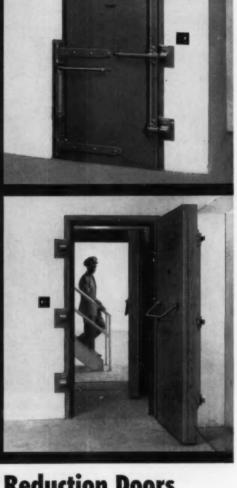
A 4-in-1 material, Armstrong Cushiontone Roof Deck provides a sturdy roof deck, multiple vapor barriers, roof insulation, and a prefinished acoustical ceiling.

### Armstrong BUILDING MATERIALS

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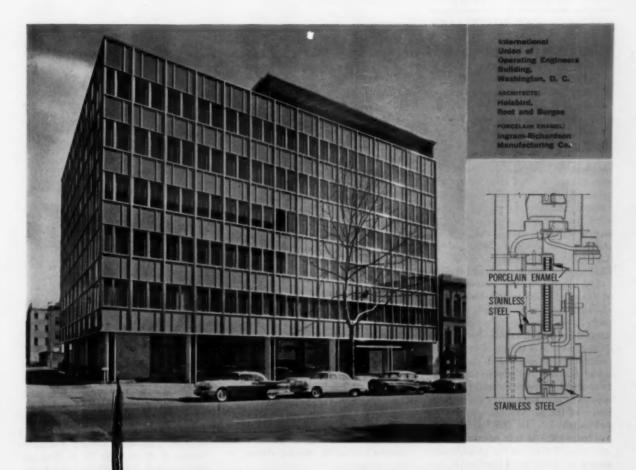


## Tests prove Jamison Sound Reduction Doors reduce unwanted noise by an average of 50 decibels

Recent tests conducted by a nationally recognized laboratory, in accordance with "Recommended Practice for Laboratory Measurement of Airborne Sound Transmission Loss of Building Floors and Walls" No. E 90-50T, ASTM, proved conclusively that these doors provide an average sound reduction of 50 db. for single doors, and 49 db. for double doors. Tests were run over 11 different frequencies ranging from 125 to 4000 cps.

Let Jamison's wide experience and knowledge in this specialized field help you solve your particular noise problem. Write today for Bulletin or test data for specific reductions at specific frequencies. Jamison Cold Storage Door Co., Sound Reduction Door Division, Hagerstown, Md.





## Ultra-Thin Porcelain Enamel Panels Specified for Colorful New Curtain Wall Building

Lightweight panels, only %'' thick, demonstrate design latitude offered by porcelain enamel curtain wall units

The distinctive Washington headquarters of the International Union of Operating Engineers shows how porcelain enamel panels provide color, durability, economy, and are easily adapted to curtain wall defigns. Mullions and windows are stainless steel.

This design called for thin, low-cost, uninsulated panels in special sizes. All specifications were met with thin but strong and rigid metal honeycomb units that provide the color permanence and durable protection of porcelain enamel on Armco Enameling Iron.

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### MEETINGS AND MISCELLANY

THE HIGHWAY PROGRAM AND THE FUTURE OF CITIES: CONFERENCE RAISES QUESTIONS THAT NEED DEBATE

The first deliberate effort to focus professional and public attention on the implications for the future American landscape of the great new Federal highway program (AR, May 1957, page 32) was made last month by a private business firm. In connection with the dedication of its new office building in (suburban) Bloomfield, Conn., Connecticut General Life Insurance Company invited some 400 city planners, highway engineers, businessmen and Federal, state and local officials to attend a three-day symposium on "The New Highways: Challenge to the Metropolitan Region."

The sessions, held in the auditorium of the new building, developed more questions than answers; but it was generally agreed that they nonetheless constituted a milestone in a number of ways first, because of their subject; second, because of their sponsorship (how many urban planning conferences have been sponsored by private industry?); third. because of the character - and distinction - of the participants, audience as well as panelists. On this last point, it was remarkable to note how astounded and grateful many of the planners appeared to be to find themselves in the same conference with highway engineers. Aprocryphal undoubtedly, but the mosttold story of the symposium was that U. S. Housing Administrator Albert M. Cole and U. S. Highway Administrator Bertram D. Tallamy had met for the first time at the dinner which opened the symposium.

The scope of the discussions is suggested by the titles of the five major panels: The Relationship of Highways to the Pattern of Land Use; The Highway's Impact on Production and Merchandising; The Highway's Impact on Living and Shelter; The Highway's Place In Metropolitan Transportation; and Making the Highway a Tool for the Future City.

Everybody agreed that the highway program intensifies and makes increasingly more urgent the massive problems of urban development already heightened by the urban renewal program; and everybody agreed that "planning" and "coordination" were the essential instruments of any solutions. But there was clearly no common definition of "planning" nor agreement as to any agency of "coordination": as Lewis Mumford said in his summary at the end, there are two great organizations planning separately for the sake of the house and for the sake of the motor car: "Nobody is planning for the sake of the human community." And it must be reported that if the profession of architecture has its special contribution to make to the coming development of America's cities, it was not defined in this symposium.

Architects were represented among the participants by Edmund R. Purves, executive director of the American Institute of Architects; Walter Bogner, chairman of the national A.I.A. Committee on Community Planning; and some 20 others of their number — including, among the 40 speakers, Carl Feiss, William E. Hartmann (Skidmore, Owings & Merrill), Albert Mayer and Victor Gruen.





SYMPOSIUM SNAPSHOTS—Speakers Victor Gruen and Lewis Mumford (top); above, Panelists Albert Mayer and Larry Smith with Gordon Bunshaft of Skidmore, Owings and Merrill, designer of the building; below, the genie of the occasion, Connecticut General President Frazar B. Wilde, with U. S. Housing Administrator Albert M. Cole and Miles Colean, chairman of the symposium



1957 PALACE FOR BUSINESS -Site of the symposium, and its inspiration. was Connecticut General's magnificent new office building designed by Skidmore, Owings and Merrill. Set in the gently rolling, pastoral landscape of a 226-acre site in suburban Bloomfield, Conn., five miles from the company's old headquarters in downlown Hartford, the structure contains, within its handsome envelope of green glass and black steel, a world of amenities, both esthetic and functional. which the company hopes will attract and hold the young women employees on which its operations so largely depend - a superbly crafted, lavishly endowed environment, perfectly controlled, to compete with the careless diversity of downtown. Cost figures were not released, but \$19 million is considered a canny estimate



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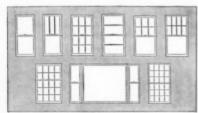


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Double hung wood windows, because of their durability, continued utility under all conditions of use and maintenance, are still the most used windows in homes today. Another reason is that wood is a nonconductor of heat and cold. This means that the inside frames and sash of wood windows remain cool in summer and warm in winter. Double hung wood windows have been further improved through use of spiral, steel tape balances or a spring sash balance and weatherstrip combination. Metal weatherstrip, made of non-rusting zinc, bronze or aluminum in combination with spring sash balance, can be installed on new or old sash. It eases the operation of wood windows and reduces air infiltration to a minimum.

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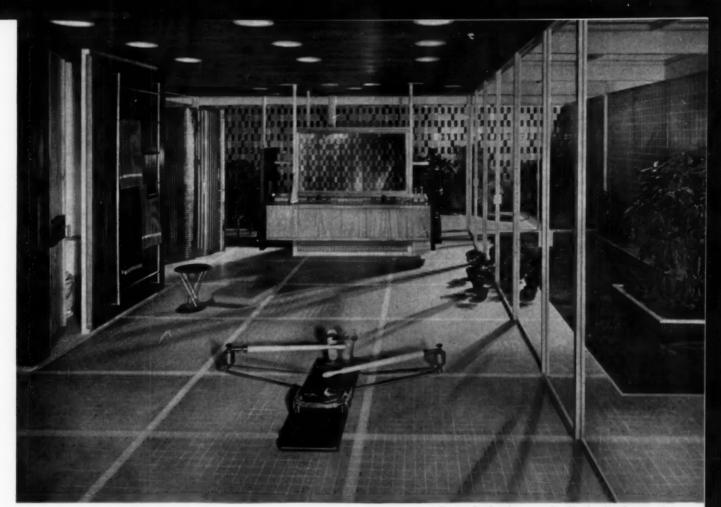
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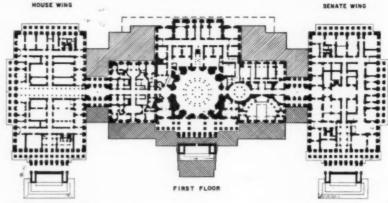
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#### a WASHINGTON report by Ernest Mickel

Below: Photograph of East Front as it is along with drawing of East Front as it will appear if proposed extension is executed. Façade studies of the proposed West Front have not been completed. Right: plan of first floor - ground level at East Front, one story above at West - with cross-halching indicating proposed extensions. Advisory architects have suggested eventual forward extension of House and Senate wings to restore present relationship between them and central portion







#### REPORT URGES EXTENDING CAPITOL

A 50-page report on "preliminary plans and estimates of cost for the extension of the United States Capitol" was submitted just before Congress adjourned to the Congressional Commission for the Extension of the Capitol by Architect of the Capitol J. George Stewart. The report, presenting proposals of Associate Architects Roscoe DeWitt and Fred L. Hardison of Dallas, Alfred Easton Poor and Albert Homer Swanke of New York City and Jesse M. Shelton and Alan G. Stanford of Robert and Company Associates, Atlanta, recommends extending not only the East Front of the Capitol but also the West Front. Mr. Stewart reports that Advisory Architects John F. Harbeson of Philadelphia, Henry R. Shepley of Boston and - before his death this summer - the late Arthur F. Brown Jr. of San Francisco concurred in the recommendations. Implementation of the report must await Commission action, not expected immediately.

Also in the closing days of the old session, a bill was introduced by Rep. Henry Reuss (R-Wis.) to amend the authorized legislation (PL 242) to

"free" the architectural consultants from legislative language binding them to consideration of "Scheme B," the Carrere and Hastings proposal of 1905 of which extension of the East Front is the much-controverted heart. In a House speech supporting his views, Mr. Reuss asserted that Carrere and Hastings themselves actually had recommended a far less extensive scheme and had expressed hope that "Scheme B" would be rejected. In recurring debates in the years since, architects of the country in American Institute of Architects convention resolutions have repeatedly opposed the proposal to extend the East Front and insisted other solutions to the problem could be evolved.

The present proposals, if carried out in all their phases, would mean the expenditure of \$110 million on enlargement plans, traffic patterns to keep vehicles off the East plaza, and landscaping. One of the least dramatic and most significant results would be a vast reorganization of circulation within the Capitol to separate public from Congressional traffic and relate service functions more realistically to both.

Details of the plan were broken down into two major schemes, B and C. The first is essentially the earlier proposal. dating from the 1905 study, which contemplates moving the East central portion forward 321/2 feet, clothing the extension in marble to bring it more into keeping with the House and Senate wing units. The estimated cost of this work was placed at \$10.1 million.

"It is proposed to reproduce in marble, in substantially the same detail, all present architectural features of the central portion, such as cornices, pilasters, columns, bases, pedestals, and pediments," the Stewart report said. 'Marble will be selected of a color and texture to harmonize with the Senate and House wings.

Extension of this East Front portion will eliminate the necessity of removing the sandstone facing from the East walls and refacing them with marble, it was explained. Granite would be used for the base course and steps.

Scheme B would add 54 office rooms, eight rooms for House and Senate document use, two dining rooms (one for each branch) and nine storage rooms.

(Continued on page 388)

(More news on page 36)



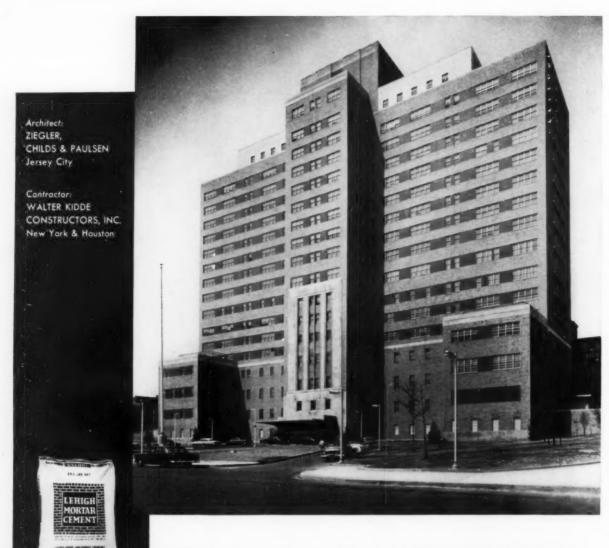








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#### **EXAMPLES OF CURRENT ARCHITECTURE ACROSS THE**



HOTEL FOR TORONTO - E. I. Richmond of Toronto is architect of the \$10 million Hotel Carlton; Kahn & Jacobs of New York are consultants. Facade is white brick



HOUSE FOR SAULT STE. MARIE, ONT. -Richard H. Beaumont, owner; John B. Parkin Associates, Architects



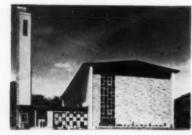
MONTREAL STAR PLANT - Barott, Marshall, Merrett & Barott, Architects; Ballard, Todd & Snibbe, consultants



MILITARY HOSPITAL FOR BARRIEFIELD - 125-bed hospital for army base near Kingston, Ont.; Shore and Moffat, Architects



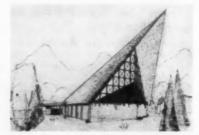
INDUSTRIAL PLANT for St. Lawrence Cement Company Clarkson, Ont., now in operation. Architects: Pentland and



UNITED CHURCH IN ONTARIO -Empress United Church in London, Ont.; shown in a recent exhibit; Watt & Tillman were the architects

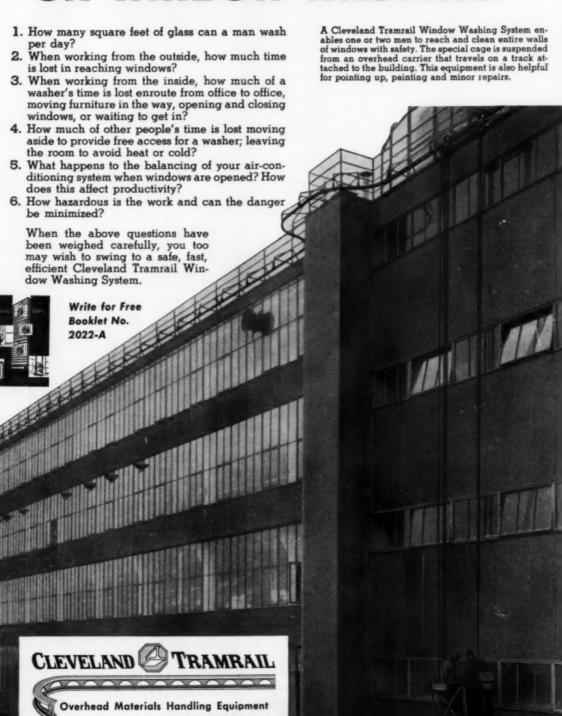


UNITED CHURCH IN NEW BRUNS-WICK - \$60,000 200-seat church, Riverview Heights, N. B.; John L. Darby, Bedford, N. S., Architect



UNITED CHURCH IN ALBERTA -\$30,000 100-seat chapel, Waterton Lakes Park; Meech, Mitchell, Robins & Associates, Architects

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#### THE RECORD REPORTS

#### NEWS FROM CANADA

(Continued from page 36)

#### ONTARIO COURT DECISION HITS DESIGN PLAGIARISM

Those who "adapt" the ideas of others in designing buildings leave themselves open to lawsuits under the Copyright Act, according to a judgment recently handed down by Mr. Justice Stewart of the Ontario Supreme Court.

"The question is of considerable importance," said his lordship, who awarded a builder-contractor damages against four defendants who were charged with "copying" the design of a \$12,500 house he had erected in Sarnia, Ont.

Damages totaled \$400, of which the owner of the house has been required to pay \$100, and his real estate agent and builder \$300.

The only reason, stated the justice, why more such matters have not gone to court before is that "architects have been more ready to accept the compliment implicit in the repetition of their design than to insist upon a legal right."

At the Sarnia trial, the defendants argued that they did not exactly duplicate the design of the house, but made certain alterations. They also claimed that the building was not subject to copyright and that it did not have sufficient artistic quality or design to come within the meaning of the Copyright Act.

Mr. Justice Stewart said he thought that an attempt to produce beauty and originality had been made in the house, therefore it did come within the meaning of the Act.

He recalled that he had been asked to decide whether or not the house was artistic or inartistic. But he observed that legislatures have refrained from appointing judges as arbitrators of the arts, although chancellors and boards of censors "may be saddled with the duty of protecting an innocent and pureminded public from impropriety in the arts."

He said he thought no legislature would be "so addle-pated" as to expect judges to decide whether architects produce buildings "which are artistically good or artistically bad."

#### What is Artistic?

But Mr. Justice Stewart had much to say on his own judgment of what is artistic. Extracts from his remarks:

"The good art of today is almost invariably the bad art of tomorrow.

"The jewelry of Fabergé and Cellini are as artistically valid as Cheops' Pyramid or the Temple at Karnak, artistically speaking.

"There may be infinite riches in a little room.

"A Cape Cod cottage or a small country Georgian house are of no less architectural merit than the costly cube which today expresses the success of a large corporation.

"He who rejoices in the stately periods of Sir Thomas Browne would probably find the prosody of Gertrude Stein intolerable.

"Orff and Offenbach, save in the unusually eclectic, do not attract the same disciples, nor for that matter would Martha Graham and Gypsy Rose Lee. In this antithesis I may be wrong."

The legal approach, Mr. Justice Stewart noted, is to elevate precedent and to view innovations somewhat askance.

"The function of a judge has always been to weigh evidence and propound existing law.

(Continued on page 44)



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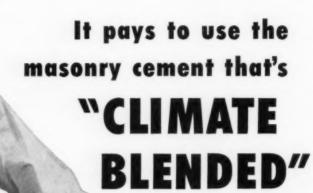
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#### THE RECORD REPORTS

#### NEWS FROM CANADA

(Continued from page 40)

"In the arts, evidence of esthetic values, is, as a rule, merely the heated opinion of prejudiced adherents."

"Artistic values cannot be weighed, for no universally acceptable unit or artistic weight has ever been agreed upon.

"Nor have any so-called artistic laws

retained their sanctity for a protracted period of time."

#### EXTENSION SCHEME WINS 1957 PILKINGTON AWARD

Carmen Corneil of Thorold, Ont., who received his degree in architecture from the University of Toronto convocation this year, won the 1957 Pilkington traveling scholarship with his conception of an extension to the Royal Ontario Museum.

Second and third prizes went to Barry A. Rand and Roger W. Smeeth, respectively, both of Vancouver and attending the University of British Columbia. Mr. Rand's project was a provincial legislature for British Columbia. Mr. Smeeth submitted a transportation center for Vancouver.

This is the 11th annual award of the Pilkington scholarship, which is open to students of the five architectural schools in Canada and provides the winner with \$1500 for research in Britain and Europe plus traveling expenses to and from England. Second and third prizes are \$200 and \$100. Submissions this year totaled 10.

"The first prize winner's scheme was of a completely different nature from the others submitted," the judges said in a written report. "Mr. Corneil chose an unusual and difficult problem — the extension of an existing building. His solution shows great architectural promise and a sensitive appreciation of the problems involved. He has shown restraint in working out the numerous details, and while the jury felt that some aspects required further consideration, the quality of the work was thought to be of a very high calibre.

"The second and third prize winners chose new buildings for their problems. The second prize winner, Mr. Rand, chose an ambitious program and displayed a good deal of ability in his solution. At the same time the jury felt that he was not entirely successful in his handling of the relationship between the various elements, and the scale of the central open space. The third prize winner showed considerable planning ability and sensitivity, but the solution was not considered to be of quite the same calibre as the former two."

The five judges were nominated by universities, with the Pilkington company represented by one non-voting architect who acted as professional adviser. They were: W. H. Gilleland, Ottawa, University of Manitoba; D. F. Lebensold, Montreal, McGill University; Ian MacLennan, Ottawa, University of British Columbia; Hart Massey, Ottawa, University of Toronto; Paul O. Trepanier, Granby, Ecole des Beaux Arts; and Victor P. Belcourt, Ottawa, Pilkington Glass Ltd.

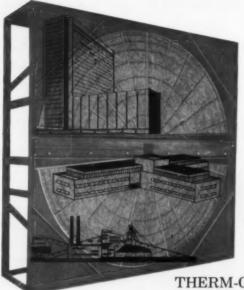
#### ENGINEERING INSTITUTE HOLDS ANNUAL MEETING

Unemployment in the construction industry in winter is in large measure a result of "customs and traditions," C. R. Crocker, associate research officer of the National Research Council, Ottawa, told delegates to the 71st annual

(Continued on page 46)







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#### THE RECORD REPORTS

#### NEWS FROM CANADA

(Continued from page 44)

meeting of the Engineering Institute of Canada, held recently at the Banff Springs Hotel, Banff, Alta.

Illustrating the influence of "customs," Mr. Crocker said prairie builders—who face the most severe winter conditions in the country—were surprised when they learned that most construction jobs in Vancouver shut down for six weeks in a period when temperatures were a relatively mild 10 to 20 degrees.

"Canada," Mr. Crocker added, "cannot afford to shut down or even to slow down appreciably so vital an industry as construction."

In the E. I. C. election of officers, Clement M. Anson of Sydney, N. S., succeeded Vernon A. McKillip of London, Ont., as president.

Concluding ceremonies saw honorary membership in the Institute conferred by retiring president Vernon McKillop upon the following: J. Omer Martineau, assistant chief engineer, department of roads, Quebec; Andrew G. L. McNaughton, chairman, Canadian section, International Joint Commission, and chairman, Canadian section, Canada-United States Permanent Joint Board on Defense, Ottawa: Penrose M. Sauder, manager and colonization manager, St. Mary and Milk Rivers development, Lethbridge, Alta.; William S. Wilson, assistant dean and secretary, Faculty of Applied Science, University of Toronto.

Richard L. Hearn, of Ontario Hydro, Toronto, and Irving R. Tait, formerly chief engineer of Canadian Industries Ltd., Montreal, were awarded the Sir John Kennedy medals.

#### Contracts Awarded: Comparative Figures'

(in \$ million)



\*Compiled by the Editor and stoff of The Building Reporter,

(More news on page 48)



MURAL. 11/16" SQUARES: RED, BLACK, DARK GRAY, YELLOW, CASCADE AND WHITE. COLOR PLATE 368.

### The trend today is to TILE

Here, in the Mamaroneck, N.Y., Senior High School, McCoy and Blair, Architects, created a striking effect with a mural of American Olean ceramics. It is one of many new buildings in which the decorative values of tile have been skillfully handled. Classes will come and go, but the tile in this building will remain

If you have a design problem, we will be glad to cooperate with you in creating decorative effects with tile.

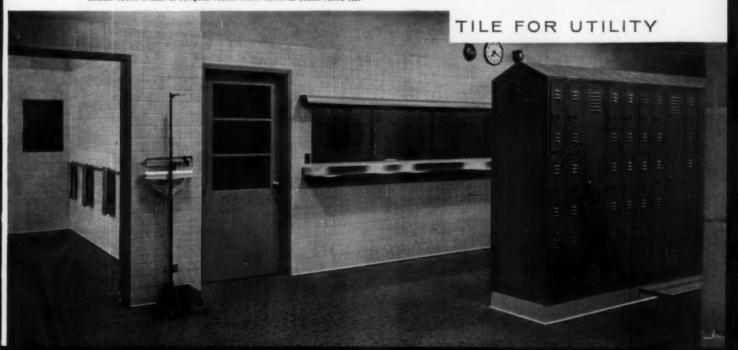
forever colorful, trouble-free, easiest of all to maintain.

Write for literature. Full color booklets. No. 600, "Tile for Schools and Hospitals". No. 901, "New Large Size Tile". American Olean Tile Co.; Executive Offices, 1248 Cannon Ave., Lansdale, Pa.

American Olean

FACTORIES: LANSDALE, PA., OLEAN, N. Y. MEMBER, TILE COUNCIL OF AMERICA, PRODUCERS' COUNCIL

LOCKER ROOM. WALLS: 51 JONQUIL. FLOOR: FAWN TEXTONE, COLOR PLATE 369.



#### 1958 CONSTRUCTION FUNDS REACH \$2.6 BILLION MARK

The most economy-minded Congress in a long time went home last month after providing more than \$2.6 billion for fiscal 1958 construction programs, not so much below the \$2.8 billion total for fiscal 1957.

Military construction took the real brunt of Congressional cutbacks in construction funds, but it was believed that supplemental appropriations next year would restore a portion of the cuts in this and other fields involving building programs.

The Department of Defense, heaviest spender in the direct appropriation category, wound up with about \$1.5 billion for all purposes with approximately \$100 million cut out of the early estimate. The Air Force public works activity followed its well established pattern of getting the largest share of appropriations with some \$900 million. At that the Air Force figure was better

than 10 per cent below the fiscal 1957 total. Army public works accounted for \$310 million of this year's funds and Navy public works for \$265 million. Both were substantially above the fiscal 1957 amounts.

The Air Force Academy construction fund was sweetened by an additional \$17.2 million, including \$3 million for the start on the new chapel, despite a furor in committee over the requests for increased amounts to cover inflating costs. The handling of the program came in for some severe criticism regarding the fund requests; and officials had par(Continued on page 374)

#### America's New Schools Can Have Strong, Student-Safe, and Attractive Aluminum Entrances with

#### ALUMILINE CENTER PANEL DOORS

#### STRENGTH

- Horizontal mullions reinforced and welded into place for greater strength.
- Heavy alumilited aluminum sheet glazed into center panel.
- Corners of doors completely welded with heavy machined reinforcements.

#### STUDENT SAFETY

- Student safety provided by extra protection of high strength center panel.
- Protects against injury from glass breakage should student's hands slip from panic crash bar.
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#### ATTRACTIVE DESIGN

- Mullions fabricated of same sections as door rails to present smooth, clean lines across the door, concealing panic crash bar.
- Alumiline Center Panel Doors available in narrow stile and wide stile construction.
- Aluminum sheet in center panel glazed in same plane as upper and lower glass openings to carry glass line throughout.

Alumiline Factory Prefabricated Narrow Stile Center Panel Doors. Note concealment of Panic Crash Bar.



Photo shows Alumiline Entrance of East Greenwich High School. Architects: Harkness, Albert, & Peter Geddes Associates, Providence, R. I.

For Alumiline Center Panel details and catalogs describing Alumiline's wide variety of standard and custom architectural aluminum products, write to:

#### The ALUMILINE CORPORATION

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#### SCOREBOARD ON CONSTRUCTION FUNDS (Appropriations—in \$ millions)

Fiscal Fiscal

Agency	1958	1957
Civil Aeronautics		
Administration		
Federal aid to airports	\$25.0	\$30.0
Housing and Home Finance		
Agency		
Urban planning grants	1.2	1.5
Reserve of planned public		
works	5.0	7.5
Farm housing research	75.0 (	th) 0
Veterans Administration		
Improve and modernize		
hospitals (total)	44.5	56.1
General Services		
Administration		
Sites and expenses, lease		
purchase program	20.0	5.0
Repair and improv., Feder-		
ally-owned bldgs.	65.0	42.6
Dept. of Health, Education		
and Welfare		
Hill-Burton Hospital		
construction	121.21	125.0
School construction, Federally		123.0
impacted areas	41.7	108.5
Waste treatment construction		50.0
Health research facilities	43.0-	30.0
construction	30.0	30.0
	30.0	30.0
Army Corps of Engineers		
Civil works construction	449.3	458.4
General investigations	10.7	9.3
Dept. of Interior		
Reclamation construction	116.7	143.9
General investigations	5.9	5.6
"Mission 66" (park		
improvements)	17.4	15.2
Dept. of Defense		
Army public works	310.0	202.0
Navy public works	265.0	165.0
Air Force public works	900.0	994.0
Air Force Academy	17.2	20.0
Atomic Energy Commission		
Plant and equipment	108.1	158.3
	100.1	130.3
Dept. of State		
Office of Foreign Bldgs.		19.0
(construction and acquisition)		

Of this total, \$99 million is for regulor H-8 construction and \$21 for the newly-authorized rehabilitation facilities. 2 With a provision added allowing the HEW to proceed on a basis of \$50 million. Congress felt only \$45 million would actually be search.

would actually be spent.

<sup>3</sup> Of which \$15 million is to be in foreign currency utilization and \$3.5 million in dallar appropriation.

#### ARCHITECTURAL RECORD

#### WESTERN SECTION

Western Editor: ELISABETH KENDALL THOMPSON, A.I.A.
2877 Shasta Rd., Berkeley 8, Calif.

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#### "PROPOSALS" OR BIDS?

Bidding on professional work has long been recognized by the architectural and engineering professions as an unsound method of selecting consultants. Most businessmen — individuals and corporations — support this principle. The U. S. Government also recognizes it and a good number of its departments and agencies have well-established regulations which guarantee freedom from the bidding technique. Although the Corps of Engineers and the Bureau of Yards and Docks are outstanding in this regard, at least one other branch of the military needs to be brought up to date on its professional S.O.P. (Standard Operating Procedure).

Normally, the engineering work of the U. S. Air Force is carried out by the Corps of Engineers as the construction agency. In the case of the Capehart Housing program, however, the Air Force has chosen to delegate construction authority to its various contracting officers. Reports from many parts of the country indicate that unrealistic A-E fee limitations are being placed on projects in this program by some elusive — and arbitrary — authority. In some cases these limitations have been over 40 per cent lower than the fee curves of the Corps of Engineers and 50 per cent lower than those of the Public Housing Administration.

The procedures set down by mutual agreement are specifically intended to insure that "proposals," based on experience, ability and size of staff and made sincerely by the firm of "first preference," will be analyzed only in relation to the job. Although such "proposals" may be made one at a time, they can be easily looked at as bids when grouped together. If such were not the case, the Air Force would adjust its fee limitation after study and would renegotiate with its first preference firm. However, in one case in California, seven firms were interviewed before the contract was given to one of the firms who entered a "revised proposal" at a later date.

In typical fee negotiations, the architect of "first preference" is told by Air Force representatives that unless his fee is below a predetermined (but secret) upper limit, their hands will be tied in the negotiation. He is also told that other well-known and experienced firms are accepting fees which are under this predetermined Air Force maximum fee. In some instances, actual firm names, well-known to all practitioners, have been used as an argument for acquiescence. The architect who knows by experience the real cost of production will refuse to take such a job. The result is that the Government is not getting the benefit of the firm of its "first preference." Obviously, the words "first preference" are meaningless when the securing of professional services is based on "bargain basement" economics.

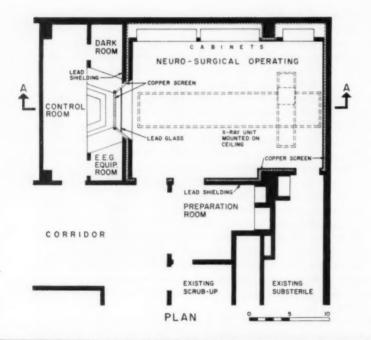
Established design procurement procedures are intended to make it possible for the Government to get the firm of its preference at a fair fee. There is now sufficient evidence from throughout the country to show that there is some serious question as to the adequacy of the fees proposed as well as to the method used for selecting architects. Protests from many offices have been directed to Washington, D. C. without result. It is high time that the profession lose its patience and demand an end to such short-sighted methods of procurement of professional service.

Robert L. Durham

"Proposals" - the term often used in negotiations for government contracts - sometimes bear a strong resemblance to bids, as Robert L. Durham, Seattle architect, points out. The A.I.A., at its last national convention, authorized a survey of its members' experience in military construction negotictions and when this is concluded the difference between the two approaches to architectural service and selection of architects should be considerably clarified.

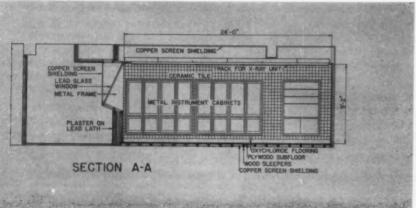
Robert Durham is a past president of the Washington State chapter, A.I.A., and is presently president of the Seattle Municipal Art Commission.





Lead glass window of control booth protects from X-ray and provides visual connection between medical team and electronics engineer in booth who operates all equipment in surgery at surgeon's request over intercom

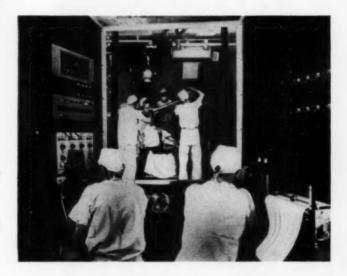
Walls are light green ceramic tile, ceiling is cement asbestos tile painted same color, floor is oxychloride. Two X-ray machines permit wide positioning range for 3-D pictures. Lights adjust vertically and laterally. Control room window is at right rear.





#### OPERATING ROOM FOR THREE-DIMENSIONAL NEUROSURGERY

Mount Zion Hospital, San Francisco Skidmore, Owings & Merrill, Architects

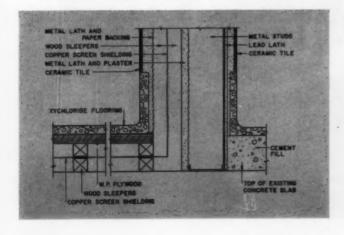


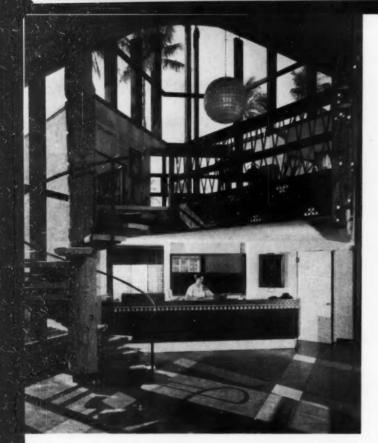
THE NEW NEUROSURGERY at Mount Zion Hospital in San Francisco involved a number of highly specialized design and equipment problems since not only were relatively new techniques in surgery and treatment to be used, but new and unusually sensitive electronic instruments for recording the minute variations of the brain before, during and after the operation. The technique a three-dimensional approach to surgery which makes it possible for surgeons to locate, within two-millimeter accuracy, hitherto unapproachable targets in the inner recesses of the brain without destroying or damaging overlying brain tissue — involves the use of X-rays to locate specific reference points in the brain, and of radio frequency current to produce a lesion (i.e., destructive process) in the particular area whose function is affected.

Shielding of adjoining rooms from X-rays required that some parts of the walls, and the doors, be lined with lead. Protection of the electronic recording instruments from outside electrostatic interference had to be effected by completely surrounding the room with copper screen, hung between two studs to prevent its touching the outside walls.

The steel frame for the ceiling hangs from large porcelain insulators; the floor (oxychloride on waterproof plywood) rests on wood sleepers laid in pairs (with the copper screen between) on a concrete floor slab. This construction, in effect, "floats" the room within the existing hospital building.

The control booth, adjoining but separate from the surgery, contains controls — duplicated in the surgery — for recording instruments, electronic stimulator, ultrasonic and microwave equipment, high frequency diathermy unit, and for moving X-ray equipment in any direction. Surgery and control booth are connected by intercom system.



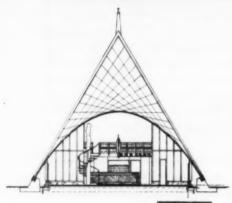


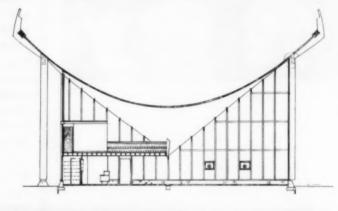
#### HYPERBOLIC PARABOLOID FOR HOTEL LOBBY

Wimberly and Cook, architects; Richard R. Bradshaw, structural engineer; Edward Malcolm Brownlee, sculptor; George Walker, landscape architect

Focal point of the Waikikian Hotel in Honolulu's beach section is the small structure that houses its lobby, offices and shops. Designed to give individuality to a small hotel located near much larger projects, the structure is a simple hyperbolic paraboloid whose form was studied from the spirit houses of ancient Polynesian chiefs.

The structure is anchored in concrete buttresses at two points only; from these it rises to a height of 42 ft at either end. The 40 by 80-ft hyperbolic paraboloid is formed of two layers of one-inch board; laminated two by ten edge beams were nailed to the sheathing. To permit movement of roof, glass stops four inches below beam line. Construction cost was less than estimated.







Hand-carved Polynesian canoe prows, weighing 1500 lb each, decorate roof ends. Suspended circular stair labovel leads to cantilevered balcony where shops are located Carved front of hotel desk, lights, and roof form itself answer owners' requirement that hotel "look like visitors think Hawaii should look"



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News of another home built with United States Steel

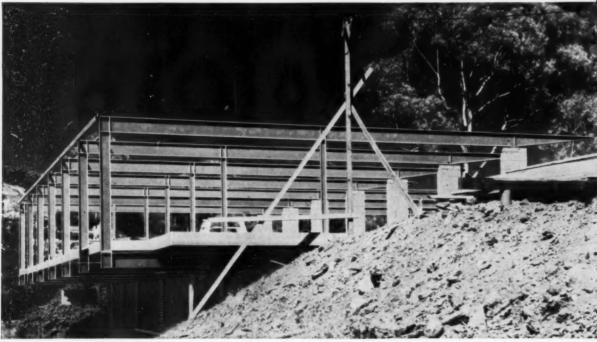
# Steel conquers time and space on a western slope

Sequoyah House...gracefully poised on a California hillside...is an outstanding example of how an architect can by-pass costly, conventional building methods and take advantage of a steep, sloping site to produce a home of enduring beauty.

Steel solved the problem. The structural steel frame, erected in three short hours, anchors this home to its hill site, and offers flexible opportunities for future expansion. In addition, steel lends itself to a variety of new design possibilities not available with standard construction methods.

This is the story of Sequoyah House...a new concept in home design, with a timeless skeleton of steel.

From a shallow shelf carved in the hill, the single-level house juts into space over a reinforced concrete block foundation. Rigid frame construction with seven "U" shaped structural steel ribs, withstands all lateral forces and is cantilevered 11 feet beyond the foundation. Sequoyah House utilized standard steel sections, supplied by United States Steel: 12"WF27# and 12"WF19# for floor and roof beams. The module is 10 feet. Beams carry the floor and "float" the ceiling... to eliminate all load-bearing walls and offer an unobstructed picture-window view.







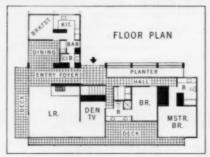
The "L" shaped plan is open and flexible...a blending of inter-related space and well-meshed indoor-outdoor living areas. On the uphill, or ground-level side a large concrete patio with redwood dividers is sun-sheltered under a wide roof overhang, resting on the smoothly tapered tips of the seven major steel supports. The United States Steel shapes in this home are used by leading fabricators and are also available through steel jobbers in your area.

ARCHITECTS & ENGINEERS: Write for your free copy of "New Horizons for Home Building... With Steel". This new booklet contains case histories of architect-designed steel homes and information on building codes,

specification data and advice on the maintenance and painting of steel. Write: Architects & Engineers Service, Room 1260, United States Steel Corporation, Columbia-Geneva Steel Division, 120 Montgomery Street, San Francisco 6.

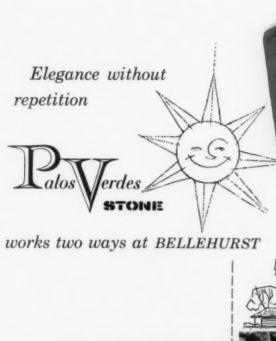
Architect: Thorne, Berkeley, Calif. Builder: Ray Nichols, Oakland, Calif. Structural Engineer: Donald H. Moyer, Berkeley, Calif. Steel Fabrication and Erection:

Herrick Iron Works, Hayward, Calif.

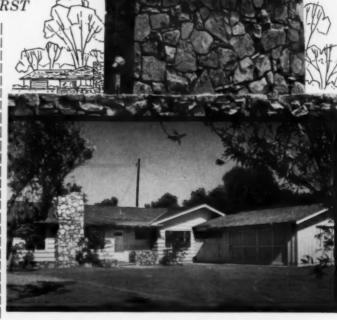




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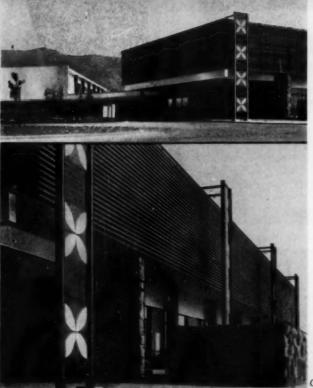
In preparing 15 custom designs for nearly 200 homes in the new Bellehurst country club community in the Buena Park-Fullerton area near Los Angeles, Architect James Wilde made widespread use of Palos Verdes Stone. He employed its range of soft neutral colors and distinctive textures both to give variation to fireplaces, chimneys, planters and accent walls and to give distinction and identity to this new community. No two installations of Palos Verdes Stone are identical...each has its own individual charm and distinction...yet they help to integrate the different designs of traditional and contemporary homes into an esthetically unified whole. Since no other stone is quite like Palos Verdes Stone, home buyers are quick to recognize and approve it. Being natural stone, it is permanent, maintenance-free, always beautiful... a touch of elegance that lends distinction to any home. Nothing else adds so much visible value-at so little cost!

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# WESTERN BUILDINGS



San Jose, California: Shopping Center

Surfaced in glazed ceramic tile, stack at Valley Fair Shopping Center, San Jose, Calif., was designed as feature of one of plazas in center. Victor Gruen & Associates, architects







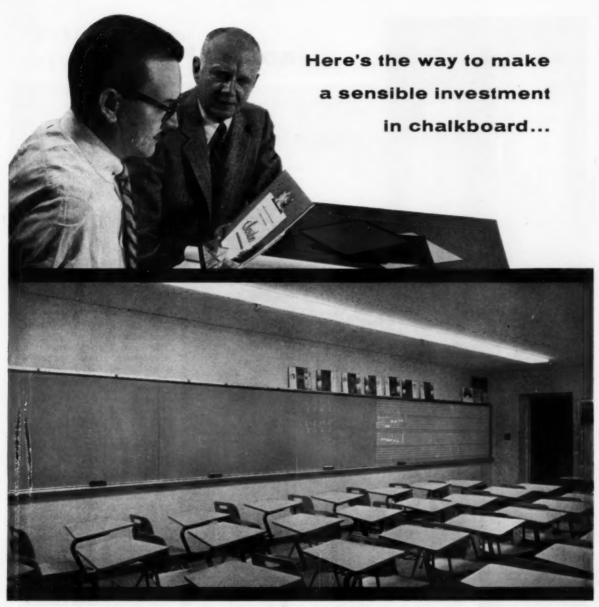
Los Angeles: Sports Arena

Construction of Los Angeles' Sports Arena will begin by end of this year; completion is scheduled for spring of 1959. With seating for 16,000 at hockey games, 19,000 at boxing matches, 30,000 at conventions and civic assemblies, arena will be one of country's largest such buildings. Working against early deadline, Welton Becket & Associates, architects and engineers for project, completed preliminaries in six weeks, working drawings in four months

#### Denver: Courthouse Square

Denver's changing skyline will be further changed with completion of William Zeckendorf's Courthouse Square development project, where construction is under way on underground parking garage for 1200 cars, four-story and basement department store and 900-room hotel. Department store will be enclosed by gold anodized aluminum panels with honeycomb core; extension building will be roofed by hyperbolic paraboloid concrete shell. Brise-soleil of pre-cast mosaic frames will form exterior enclosure for hotel building wall. I. M. Pei, architect





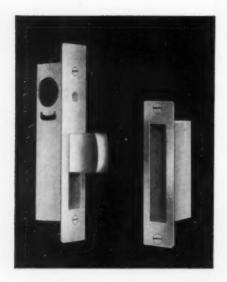
New Music Building, Pasadena City College. Associated Architects: Robert H. Ainsworth, A.I.A., Pasadena and Kenneth Wing, A.I.A., Long Beach. Chalkboard Contractor: Brookman Company, Alhambra.

Look for the 5 features that make sense with architects, contractors and school officials alike and note that Scribo Chalkboard has them all:

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- 2. Tough enamel finish baked onto selected hardboard...with excellent writing and erasing characteristics.
- **3.** Easy upkeep...erases without ghosting...eleans with a damp cloth.
- **4. Standard installation** with metal or wood trim.
- 5. And a very sensible price.

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Whether you specify, install, or sell narrow stile locking devices, you can be confident that Adams-Rite offers the utmost in design, construction, simplicity and safety. Check these advanced ideas that insure top performance and lasting customer satisfaction:

#### Illustrated above - Maximum Security 1850 Deadlock:

This is the unit that provides Maximum Security for modern narrow stile swinging glass doors. The pivoted bolt actually bridges the opening with a bar of steel, retaining as much bolt within the lock stile as is projected. Its protection is so great that forced entry is impossible without destruction of the door itself.



#### MS 1849 Two-Point Door Bolt:

The modern method for locking the inactive door of a pair of narrow stile doors. Top and bottom botts are locked or unlocked by natural operation of an attractive turn conveniently located on the inside surface. Positive deadlock of both doors is automatically provided when cylinder deadlock is thrown.



#### 970 Minimum Backset Deadlock:

This unit provides economical deadlocking for rigid narrow stile swinging doors. Like all Adams. Rite narrow stile locks, the 970 Series operates with standard mortise type cylinders of any make.



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#### 1450 Deadlocking Latch:

Traffic control is made possible in a narrow stile swinging door entrance by use of the 1450 Series Deadlocking Latch. Two-way traffic flow or restricted entrance is achieved by a simple selector. Ideal for any public area with a closing-hour problem, such as banks, markets, apartment houses, etc. It satisfies building and safety regulations.



#### 1340 Series, Deadlock and Latch:

Combination deadlock and latch for narrow stile swinging doors. A simple selector changes the unit from free swinging to latch action. The positive latch action helps prevent air losses when temperature control systems are used.



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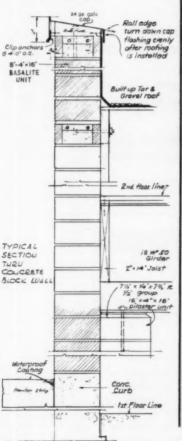
Office-Store Building of Operating Engineers, Local No. 3, Fresno, California

architect: DONALD S. MACKY, A. I. A. Oakland, California

contractor: MARSHALL CORPORATION San Carlos, California

mry contractor: FRESNO MARBLE & TILE

Fresno, California





THIS combination office-store building calls for materials that provide attraction for customer-appeal in the store area...plus comfort for working efficiency in the office area. BASALITE Lightweight Masonry Units were used for three walls and to enclose the complete stairwell of this structure.

This excellent example of contrasting materials, shows the extreme versatility of BASALITE CONSTRUCTION...both structurally and appearance-wise. The BASALITE Units are of Desert Beige color to give pleasing COLOR-CONTRAST with the Blue of the ceramic tile and Aluminum of louvers and sash.

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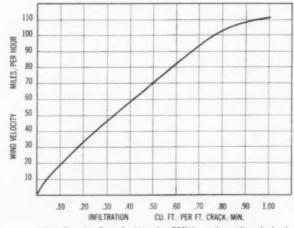
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Integral weather-stripping, will not pull off, provides positive protection.

Tubular ventilator sections for strength and rigidity, freedom to design greater glass areas.

Alumilite finish from our own plant, enhances the beauty, keeps windows new-looking longer.

Where putty glazing is desired, Soulé putty lock eliminates spalling, makes neater putty glazing.



Air Infiltration Test, Soulé series 900W weather-stripped aluminum windows with vinyl 939-8 gasket. Air infiltration measured with Ellison's Inclined Draft Gauge. Test made on a 4'-0" by 2'-8" ventilator.

# weather-stripped aluminum windows— REDUCE HEAT LOSS, DUST AND AIR INFILTRATION

#### help cut air conditioning costs!

New Soulé series 900W (weather-stripped) aluminum windows are proved in rugged hurricane and cyclone tests to exceed all industry specifications for performance. Series 900W are guaranteed not to exceed 0.5 cubic foot of air infiltration per minute per lineal foot of crack at 25 mph (in actual tests, series 900W windows showed only 0.14 cubic foot of air infiltration per minute per lineal foot of crack at 25 mph!). Wind velocities up to 120 mph in maximum design sizes have been experienced with proportionate resistance to infiltration. Proved performance, along with manufacture and installation by Soulé, are important reasons why new Soulé series 900W are the standard of quality in weather-stripped aluminum windows.

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Dallas 528 Interurban Building, Riverside 1-5225

4130

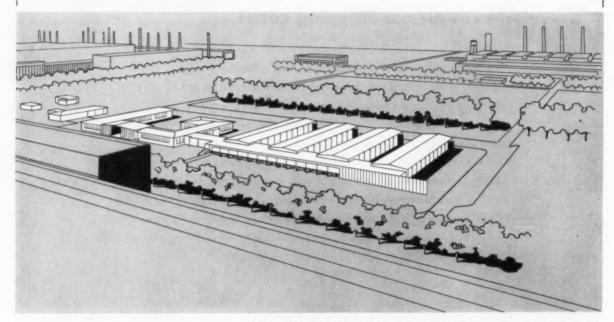
#### Designed by Kaiser Engineers



Marshall W. McDonald, Industrial Designer

Constructed by Donald & McKee, Contractors

Interior\_WEBERWALL by Weber



Engineering Building, Kaiser Steel Corporation, Fontana, California

The Kaiser Steel Corporation has chosen WeberWall for the interior of their new five wing engineering building at the Fontana, California Plant. Kaiser, like so many other progressive corporations now building or expanding in the West, has chosen steel WeberWall movable partitions for their appearance, efficiency and flexibility.

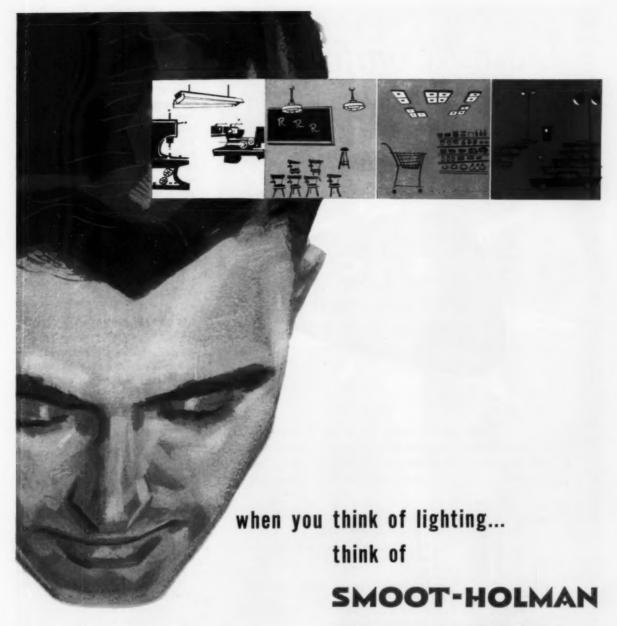
More than 2700 linear feet of steel WeberWall partitions have been specified in the new Kaiser Building. A striking color effect has been achieved by using a different color for the doors to individual offices in each of the five wings. Colors chosen by Mr. McDonald to compliment and dramatize the mustard yellow partitions were persimmon, powder blue, pacific blue, medium green, and bright yellow.

The designers have given the building a light, airy feeling by combining standard steel WeberWall panels with full height twelve foot glass panels, and louvered jalousie-type window transoms above the office doors.

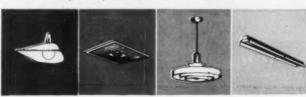
The effect you are seeking can be easily achieved in your offices with standard steel WeberWall if the architect is allowed complete freedom in design. WeberWall not only gives you the pleasing atmosphere you want in your office, but its movability allows for inevitable future changes. If you are planning new offices, write or call Weber for our brochure, "Planned for the Future."



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#### CALIFORNIA LEADS IN

In residential building and heavy engineering contracts for the first six months of this year, California was ahead of the other 47 states, and in dollar total of construction contracts, it was the only state to reach - and pass - the two billion dollar mark during that period. The picture might have been even brighter except for the fact that residential construction in California as elsewhere is down this year from last year's high. Even so, statisticians of F. W. Dodge Corporation found that California accounted for 13 per cent of the national total of contracts; New York and Illinois were in second and third place with 10 and seven per cent.

Texas was fourth in total contracts, but ranked eighth in non-residential construction.

#### LICENSES ISSUED TO FOUR DESPITE BOARD RULING

A "procedural error" on the part of the Colorado State Board of Architectural Examiners is the basis for a court order to the board to issue licenses to four applicants. The board had held that the applicants could not qualify under the "grandfather clause" of the present act since it considered that they had been practicing as "designers, draftsmen and engineers" rather than as architects during the previous three-year period set by the act.

The applicants — Donald Marshall, James Reagan, Woodrow Ramsey and Roger Reeves — brought suit against the board in the Denver District Court. District Judge H. Joe Rawlinson overruled the board's refusal to license them and ordered the board to issue the licenses. The board then appealed to the State Supreme Court, which ruled last month that the board was in error for not having asked a new trial in Judge Rawlinson's court.

#### FERRY PARK PLANS REJECTED BY STATE

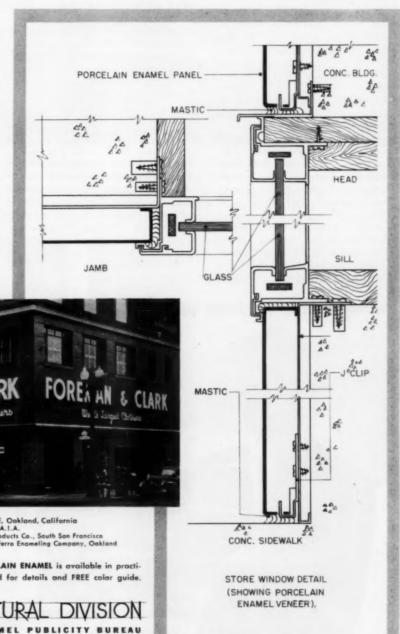
Ferry Park, San Francisco's dream of a waterfront park, lost out last month to Project X, a proposed indoor-outdoor museum of historic trains and ships to be located at the city's Aquatic Park in the North Beach area. Project X, at press time, seemed headed for the number one position on the list of projects which the city would like to undertake with money from the tidelands oil funds being dispensed by the State Beaches (Continued on page 48-20)

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#### FERRY PARK PLANS

(Continued from page 48-18)

and Parks Commission for beach and park development and historic monument preservation. Other projects on the list include restoration of the Palace of Fine Arts, repairs to Steinhart Aquarium, and reconstruction of the Spanish monastery which William Randolph Hearst presented - in hundreds of pieces — to the city some years ago.

Ferry Park's bid for the \$2,000,000 of the tidelands money which has been allotted to San Francisco was rejected by the commission because it objected to the Embarcadero freeway, now under construction, saving that this structure made the site "inappropriate for development of any State or historic monument." Just what such a waterfront park might have meant to the rundown area adjacent to the Ferry Building was handsomely demonstrated in the design prepared in model form by architect Mario Ciampi (pages 48-2, 3, Western Section, September 1957).

Although Ferry Park as a project was and is - quite distinct from the redevelopment of the Produce District north and west of the Ferry Building, it would have tied in to the district for whose redesign Skidmore, Owings &

Merrill have prepared plans. The Produce District redevelopment - known as the Golden Gateway project - is currently being appraised in order to determine the present and future property values involved. The city's Redevelopment Agency has been authorized to apply for Federal funds to complete plans for the project.

Whether a bond issue will be submitted to the voters for money to carry out the Ferry Park plan is still a matter of conjecture. The estimated cost of executing the whole development around the Ferry Building has been set at \$6,000,000, \$4,000,000 more than would have been available from the State Beaches and Parks Commission.

#### HILTON TO BUILD SAN FRANCISCO HOTEL

A 1000-room hotel in San Francisco's downtown district is being planned by Conrad Hilton, international hotelman, who has just taken title to the entire block bounded by Ellis, Taylor, O'Farrell and Mason streets. The site, directly opposite the National Broadcasting Company's building and two blocks from Union Square, is almost-level.

Estimated cost of the hotel is \$20,-000,000. No date has been announced.

#### YAMASAKI, HALPRIN NAMED BY SEATTLE FAIR BOARD

Minoru Yamasaki, Detroit architect, and Lawrence Halprin, San Francisco landscape architect, have been named out-of-state consultants for the Seattle Civic Center and World's Fair. Local members of the Design Standards Board for development of the two projects include architects Robert Dietz, Paul Thiry, Perry Johanson and John S. Detlie, and city planning director John Spaeth.

The site for the fair, and subsequently for the civic center, is an 80-acre plot adjacent to the existing civic auditorium.

#### ASSOCIATION NEWS

A Metal Curtain Wall Division of the National Association of Architectural Metal Manufacturers was formed at its convention in San Francisco last May. The division will "establish standards, initiate research, develop specifications, and institute an extensive metal curtain wall public relations and promotional program," and in doing so will work with A.I.A., and with the American Iron and Steel Institute, and American Society for Testing materials.



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## Steel opens new horizons in school design

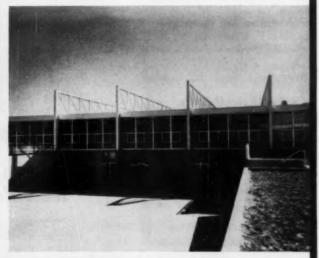


STEEL FOR BEAUTY! Kellogg High School, Kellogg, Idaho, is a dramatic example of the functional beauty that can be achieved through steel. Fabricated by Gate City Steel, Boise, Idaho, using United States Steel angles, plates, and structurals, it contains 68,000 square

feet of space. The contemporary design provides maximum lighting for students and is a permanent structure, economical to maintain. Culler, Gale, Martell, Norrie, of Spokane, Wash., and Perkins and Will, of Chicago, Ill., were associated architects.



STEEL FOR ECONOMY! The Green River School in Utah was built at a cost of less than \$10 per square foot... one of the most economical school buildings in the Intermountain West! This modern structure features an all-welded frame... one of the first in this area. Architects were Cannon, Smith & Gustavson, Salt Lake City. Dean L. Gustavson—partner in charge.



STEEL FOR VERSATILITY! Exposed steel trusses solved a problem in the construction of the Green River School's gymnasium ... and saved about \$30,000 in building costs! Since soil conditions required the building to be founded on pilings, the gym could be recessed half its height into the ground. This unique design allowed for a continuous roof plane. For your next project, consider the advantages of steel—United States Steel.

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#### ARCHITECTS, ENGINEERS JOIN TO DISCUSS NUCLEAR ENERGY IMPACTS

Architects and engineers have a particular role in the development of the nuclear field, a panel of architects, engineers, and nuclear scientists told a joint meeting of architects and engineers in San Jose, Calif., recently. But they cannot use old ideas and time-worn solutions to meet the new and highly specialized requirements of nuclear buildings, they agreed.

The meeting - an annual joint activity of the Coast Valleys chapter, A.I.A., and the San Jose Section, A.S.C.E. included also members of the San Jose Engineers Club, the Santa Clara Valley chapter, California Society of Professional Engineers, the Structural Engineers Association of Northern California and the American Nuclear Society. On the panel, moderated by William M. Rice, A.I.A., A.S.M.E., A.N.S., of the University of California Radiation Laboratory and member of the A.I.A.'s national committee on nuclear facilities. were Ashton O'Donnell, A.N.S., manager for nuclear developments, Stanford Research Institute; Dr. Ralph Bennett, director, General Electric's Vallecitos Atomic Laboratory; Professor T. Y. Lin, A.S.C.E., of the University of California; Dr. Hayden Gordon, A.S.M.E.,

of the Radiation Laboratory; and Elisabeth K. Thompson, A.I.A., A.N.S., senior associate editor, Architectural Becord.

Discussing the meeting's topic, "The Impacts of Nuclear Energy on the Design Professions," the speakers made a sharp distinction between the existing opportunities for architects and engineers to contribute creative thinking to the solutions of nuclear building needs and the impact which nuclear processes, machines and products can be expected to make on familiar building types.

"The heart of our operation at Vallecitos," said Dr. Bennett, "is the reactorgenerator plant which involves not only the reactor itself and its containment vessel, but the steam generator, turbine and electric generating systems. These all must be housed in structures — some, like the reactor, with special requirements; others with more conventional needs — and we will have to depend on architects to make these buildings better looking."

Although many aspects of design for the nuclear field will seem to be familiar problems to both architects and engineers since they deal with solutions to space needs, flexibility in space use,

provision of employe amenities, building-to-building relationships as well as inter-department relationships and site planning, both Professor Lin and Mrs. Thompson stressed the fact that problems of shielding, of down-wind orientation, of providing adequately for waste disposal, of using materials capable of withstanding very high and very low temperatures add a new dimension to the thinking which must be basic to the design. The design professions must acquaint themselves with the fundamentals of the nuclear field if they are to provide buildings worthy of the implications of the nuclear age.

"I am afraid that the majority of our engineers are at a loss when asked to solve problems which have no precedents," said Professor Lin. "Often nuclear scientists would rather solve their own structural problems; they are discouraged by the attitude of engineers and architects unprepared to cope with their problems."

The San Francisco Bay Area already has some 10,000 people engaged in nuclear work, said Ashton O'Donnell, and there are \$25,000,000 worth of facilities in the area which are directly related to the nuclear field.



0

"Been settin' here, wettin' this fool stick for twenty years—and she ain't rotted yet." Paul Bunyan threw down the 12x12 Chemonited timber in defeat. His disgusted sigh flattened 30 acres of prime Douglas fir. "Yessir, Babe, I been suckered again by a city slicker. That Baxter man bet me a year's free loggin' to a month in Frisco that that there stick would never rot—even in moist ground. On account of this new fangled presarvative, Chemonite ... Well come on, you lazy Blue Ox, let's get haulin'..."

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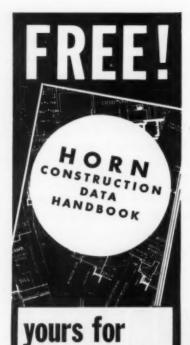
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## WASTE SPACE

The Use of Travel: To See, To Learn, To Understand

Fall is a good time to travel. The lucky ones who have vacationed are refreshed, their enthusiasm is revived, and they don't in the least mind taking a visitor around to see the sights—their own buildings and those of other architects as well. And those who haven't had a vacation are bored enough to welcome any diversion—even a visiting editor.

Visiting the Northwest - first on this editor's fall travel schedule - is a refreshing experience, whether it is for the first time or the tenth. The trees. the water, the mountains, the air these all have a special quality in the Northwest, particularly along the coast. And so does the architecture. Sometimes this is called a "regional" quality, but if it is regional, it is part of a much larger region than the area usually included in the term Northwest: to me it includes all of the Pacific coast from British Columbia down to the Monterey Peninsula, and a good part of the inland mountain slope area.

True, around each of the larger cities Seattle, Spokane, Portland, Eugene, the San Francisco Bay Area, the Monterey peninsula - are particular expressions of the family characteristics. But the resemblance between the branches of the family is marked, nevertheless, and there is nothing unusual about this. The things that make for differences the incidence of rain for instance - in general are less influential than are those that make for likenesses - the West's utterly unconcealable enjoyment of its own environment, for one thing; the beauty of the environment itself, for another; and the casual, open and warmhearted way of living, the regard for fundamentals which a close relation (still persisting in the West despite increasing urbanization and industrialization) with the good Western earth fosters, and the relative freedom from the prejudice of tradition.

In the Northwest these influences bear on buildings for public use as well as on houses whereas, generally speaking, this is not the case in other parts of the West where it is in residential work that architects have particularly interpreted the distinguishing influences of the area. Schools and churches — today's predominantly active building types, in the Northwest as, apparently, elsewhere — strongly bear this out, and so do other building types such as clinics,

libraries, a few commercial buildings although in many of these an independent streak shows signs of developing. College buildings, with a few exceptions, and institutional buildings—again with a few exceptions—motels, hotels, industrial buildings, and most recreational facilities show little if any contact with today's thinking, technology and art.

Where the "international style" has penetrated it has done so as a fundamental rather than as an absolute form, so that its precepts appear assimilated into the stream of regional development—a welcome change from the undigested rules which seem to preclude original and thorough thought and so often result in meaningless reproduction of forms and patterns.

Although everything that is being done in the Northwest isn't good, the percentage of worthwhile work to commonplace is encouragingly high. The challenge to architects and to clients is that it should remain at least as high as it is now, and that in doing so it should foster the careful and loving preservation of the Northwest's beauty, an asset too often set aside in favor of the more practical demands of dellar economy.

#### Turn the Other Fascia

Tired of having church building committees slurringly refer to churches that look like barns, Seattle architect Robert Durham — past president of the local chapter, present president of the Art Commission, and architect for a long list of Northwest churches, quite a few of which have won prizes — decided to do something to stem the flood of comment.

He is collecting slides of barns that look like churches. For committees with humor the impact is a delight. For those without the priceless commodity, a dose of Christian forbearance is about the only solution.

#### To Be or Not to Be

Did you ever wonder how to categorize the man whose work, unlike a cup of tea, neither warms nor inebriates? I have, but need no longer weary my mind with searching for the right term, thanks to Rowe Smith of Salt Lake City, just retired president of the Utah chapter, A.I.A., who says he overheard a young lady asking, in deep confusion of spirit, "What are archinots?"

E. K. T.

dramatic versatility...

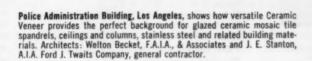


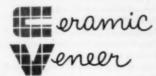
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Wall map demonstrates a dramatic indoor use of Ceramic Veneer. General Telephone Building. Architect: Albert C. Martin, A.I.A.; General Contractor: George A. Fuller.

#### PROFESSIONAL NEWS

#### Conventions

Northwest Architects. A feature of this year's northwest regional conference, A.I.A., to be held October 17–20 at Gearhart, Ore., will be an exhibition of photos of buildings designed by architects in the region. Object of the exhibition is to provide a look at "architecture at the regional level." On the conference program are architects Jose Luis Sert, Francis Joseph McCarthy, Henry Hill, and John Knox Shear.

California Engineers. California structural engineers will discuss tall building design and concrete structure construction costs at this year's convention of the Structural Engineers Association of California to be held October 31 to November 2 at Hotel del Coronado, Coronado, Calif. George Guibert is general convention chairman; David Narver is chairman of the technical program committee. Henry Layne is president of the statewide organization.

How about an IAY? A year for international research into architecture has been proposed by the Utah chapter, A.I.A., of which Georgius Cannon is president. The idea is to promote "serious international consideration of new methods, means and materials and of the implications that a highly accelerated technology and culture generate."

#### New Firms, New Addresses

Gifford E. Sobey, architect, announces formation of a partnership with Marvin S. Knox under the firm name of Sobey and Knox, at 200 San Mateo Avenue, Los Gatos, Calif.

Joseph Young, muralist, has moved his studio to 8426 Melrose Avenue, Los Angeles.

#### CALENDAR OF WESTERN EVENTS

- October 2–6: California Council, A.I.A., annual convention, and California-Nevada-Hawaii regional council meeting, Hotel del Coronado, Coronado, Calif.
- October 5–27: California Sculptors' Exhibition, Oakland Art Museum, Municipal Auditorium, Oakland, Calif.
- October 7-10: California Association of School Administrators annual conference and exhibition of school architecture, Long Beach, Calif.
- October 14–18: International Industrial Development Conference, Fairmont Hotel, San Francisco
- October 17-20: American Society of Industrial Designers, annual meeting and design conference, Ojai Valley Inn, Ojai, Calif.
- October 17-20: California Council of Landscape Architects annual convention, Mark Thomas Inn, Monterey, Calif.
- October 17–20: Northwest region, A.I.A., annual conference, Gearhart Hotel, Gearhart, Ore.
- October 29-31: Symposium, "Construction Cost Reduction Through Creative Design and Engineering", U. S. Navy Civil Engineering Research and Evaluation Laboratory, Port Hueneme, Calif.
- October 31-November 2: Structural Engineers Association of California annual convention, Hotel del Coronado, Coronado, Calif.
- November 5-6: American Concrete Institute, tenth annual meeting, Benjamin Franklin Hotel, Seattle, Wash.
- November 13–15: Eighth national conference, American Standards Association, St. Francis Hotel, San Francisco
- December 1–22: Church Art Today, juried exhibition, Grace Episcopal Cathedral, 1055 Taylor Street, San Francisco

## WESTERN SECTION INDEX TO ADVERTISING

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a	Horn, A. C. Co., Inc	48-24
	Nelson, Herman Unit Ventilator Products	48-5
	Pacific Pre-Cast Products	48-26
	Pacific Tel. & Tel. Co	48-20
	Palos Verdes Stone Dept	48-8
	Penwood Corporation	48-22
	Porcelain Enamel Publicity Bureau	48-19
	Smoot-Holman Company	48-17
a	Soulé Steel Company	-14-15
a-ic	Sunbeam Lighting Co	309
a	Sun Chemical Corporation	48-24
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AN L.O.F INTERVIEW WITH

Charles J. Dove, Superintendent,

MASON CONSOLIDATED SCHOOLS, ERIE, MICHIGAN

## Subject: Environment for Education

Superintendent Dove heads a school system that embraces 50 square miles in southeastern Michigan with an enrollment of 1,200 pupils. Over 750 attend two similar new schools, an elementary and a junior high, which are the pride and joy of the students, staff and taxpayers in the rural community they serve. Architects: Jahr-Anderson Associates, Dearborn, Michigan.

Question: Architect Lawrence Perkins, in his new book Work Place for Learning says an architect "must create

the atmosphere, the environment, that contributes most to the full growth of each child's mental, physical and spiritual potentials." How do you think your new schools fulfill this objective?

Mr. Dove: These buildings are educationally functional. They measure up to the Perkins definition very well. We have achieved the environment we sought, a pleasantly relaxed atmosphere conducive to study and healthful recreation. Our premise was that a school should not be



considered a storage house for knowledge, but an active plant designed to produce healthy, happy, educated youngsters.

Question: Have there been perceptible differences in the attitudes of teachers and students who were transferred from older school buildings?

Mr. Dove: Our teachers are proud of their new facilities. They often invite guests and take them on personally conducted tours. And our teachers have actually become volunteer recruiters for new teaching talent. Their enthusiasm brings other teachers to us. For several years I have not sought teachers in colleges. There's no need to.

We have also observed attitude changes in children of all grades. First, as soon as we moved into the new schools, the youngsters appeared on the scene just a little more dressed up, so to speak. They seemed to want to keep pace with their new surroundings.

Second, we have had no malicious destruction of property in the new buildings. Even the casual pencil marks are missing.

And third, we experience less absenteeism in our new schools.

Question: Have you evidence that children feel your school is a welcome, rather than a forbidding, place to enter?



Our teachers are proud of these new facilities.

Mr. Dove: Definitely the open-armed feeling of welcome comes from appearance of the buildings, I think, rather than their newness. Our open, colorful entrances attract the children. These broad areas of glass give approaching youngsters full view of what is within.

And once inside, they are relaxed and eager for school work. Young people want to feel that they are connected with the world about them. They don't want to be enclosed. Large windows and glass-walled corridors give them a feeling of freedom.

Question: Are these glass-walled corridors practical, with windows on both the outdoor side and the classroom side?

Mr. Dove: Fine. Corridor traffic and activities in other visible areas have not proved distractive. Students soon become used to this environment.





Large glass areas add a feeling of spaciousness to each room and give the children a feeling of freedom.

And the visibility afforded by these large windows also enables us to make maximum use of physical space. Our teachers conduct group conferences with a small number of children in the corridor while observing the activities within the classroom.

And don't forget our big window on the outside wall of the classrooms. We must remember that children learn from the world they live in. I like to consider our school as a shelter. From it the children look out and see this particular segment of the world. Out there, in effect, is the laboratory. Too often, we expect youngsters to learn in a vacuum.



Question: Do you find the use of glass on both sides of a classroom helpful in terms of lighting?

Mr. Dove: The expanse of glass in our windows and glass-walled corridors give us excellent bilateral lighting. The shadows, if any, are softer than with artificial light sources. And apart from foot-candle measurements, the bilateral natural daylighting has a good psychological effect.

We also have *balanced* daylighting. In schools that have windows on but one side of a room, lights are sometimes turned on to eliminate contrast. So our bilateral design for natural daylight is not only better, but it costs less.

Question: Are you successfully using visual aids, such as motion pictures and projected slides, in your classrooms?

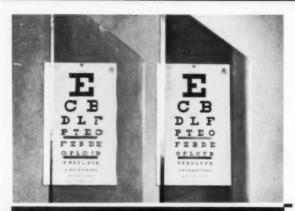
Mr. Dove: Yes. There is no basic clash between visual aids and our glass walls. We use plastic curtains, on tracks, to reduce the light. They work out very well. At the outset we considered darkening a single room for all visual presentations, but we chose to use visuals in the respective classrooms, where they properly belong.

Question: How did the cost run on these lovely new buildings?

Mr. Dove: Detailed advance planning by all concerned, notably our architects and contractors, resulted in excellent buildings at comparatively low cost. Yet we did not skimp on up-to-date design or solid construction.

Our Central Elementary School cost about \$12 per square foot and Central Junior High cost approximately \$12.60 per square foot.

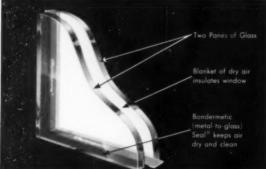
Our teachers conduct group conferences with a small number of children in the corridor, while observing activities within the classroom.



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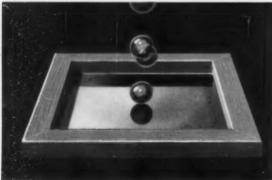
Cast a critical eye at the letters on the two eye-testing charts. The one on the left was taken through a pane of sheet glass; the one on the right through *Parallel-O-Plate* Glass.

With sheet glass, distortion is inevitable. With Parallel-O-Plate, you get maximum freedom from distortion. That's because of L·O·F's twin-grinding process in which both surfaces of the glass are ground simultaneously. Recommended for entrances and any other areas where architectural beauty and maximum lack of distortion are primary considerations.



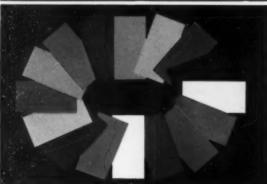
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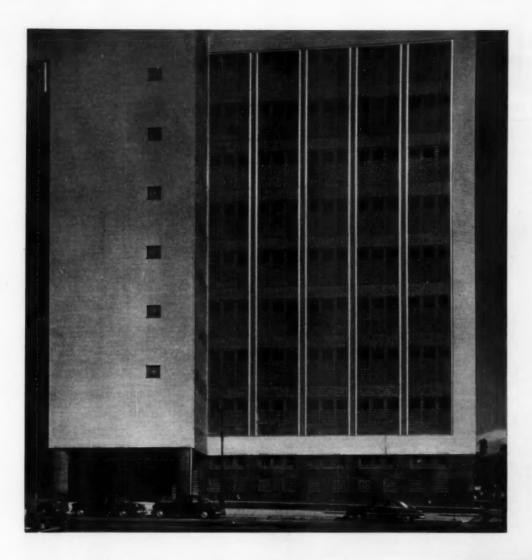
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4-12---

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#### THE RECORD REPORTS: CONSTRUCTION COST INDEXES

#### Labor and Materials

U. S. average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

ATLANTA

	Resid	lential	Apts., Hotels Office Bldgs. Brick		rcial and Bldgs. Brick and	Resid	lential	Apts., Hotels Office Bldgs. Brick	Commer Factory Brick and	rcial and Bldgs. Brick and
Period	Brick	Frame	and Concr.	Concr.	Steel	Brick	Frame	and Concr.	Concr.	Steel
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.6	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	233.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.5	231.8
1956	310.8	302.2	320.1	328.6	324.5	237.2	235.7	241.7	244.4	246.4
May 1957	316.5	306.5	329.8	341.8	335.4	239.8	238.0	245.9	249.2	250.7
June 1957	316.5	306.5	329.8	341.8	335.4	239.8	238.0	246.1	249.4	251.6
July 1957	321.0	310.7	336.8	349.5	344.6	243.6	241.3	252.0	255.6	258.8
		%	increase over 19	39			% i	ncrease over 19	39	
July 1957	159.9	153.8	157.7	162.0	164.9	182.3	190.4	165.0	162.4	173.3

ST. LOUIS

SAN FRANCISCO

July 1957	165.9	% ii	ncrease over 150.2	1939	157.2	174.3	% in	160.7	161.2	170.2
July 1957	293.0	284.6	297.0	308.3	306.1	289.7	278.9	306.1	318.4	314.8
June 1957	292.6	284.2	295.9	307.8	303.4	287.3	275.0	303.5	316.2	310.2
May 1957	292.0	283.6	294.4	306.8	300.6	286.7	274.4	302.7	315.6	309.6
1956	288.7	280.3	287.9	299.2	293.3	279.0	270.0	288.9	298.6	295.8
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.0	275.0	284.4	279.6
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1953	263.4	256.4	259.0	267.0	259.2	255.2	257.2	256.6	261.0	259.7
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1947	202,4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.6	104.9	100.4

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.



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City					

# MODERN SCHOOL



Edsel Ford High School, Dearborn, Michigan. Eberle M. Smith Associates, architects and mechanical engineers, Detroit; O. W. Burke Company, general contractor, Detroit.

The contemporary design of the Edsel Ford High School can be seen in these photographs showing the three courts around which the school is built. Above is the paved "social court" which allows access to the gymnasium and other public areas of the building. At the left, in the architects' sketch, is the "quiet court" around which are grouped the more academic classrooms. The "project court," in the center, is the hub of such creative subject classes as art, photography and biology. The efficient Johnson Pneumatic Control System regulates the heating and ventilating systems to match the needs of each room in the building.

# ARCHITECTURE

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Progressive school planners everywhere find that the diversified demands of today's schools are best answered with Johnson Pneumatic Control, A Johnson System pays off in lower heating costs...system-wide simplicity of operation and upkeep ... and complete flexibility of control to meet every requirement. Let an engineer from a nearby branch office prove these Johnson advantages to you. Johnson Service Company. Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.



With individual room control, temperatures can be varied to meet usage requirements. The modern library typifies expertly planned facilities that stress comfort and ease of use.



Proper ventilation and optimum temperatures in gymnasiums protect student health and comfort. Dual Thermostats allow nighttime use without heating unoccupied rooms.



Special comfort requirements where students are physically active and heat producing equipment is used are easily met by strategically located Dual Thermostats.

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### TAPPING THE SPIRIT OF JAPANESE ARCHITECTURE

By MARCIA WURTH



Japanese Temples and Tea-Houses. By Werner Blaser. F. W. Dodge Corp. (N. Y.), 1957. 156 pp., illus. \$12.75

Left, Tana, a recess with wooden shelves. Below, the main buildings, Nijo Palace, graduated in harmony with the garden



Werner Blaser, in his new book Japanese Temples and Tea-Houses, finds a need in much contemporary architecture and seeks to inspire a solution to this by the example of Japanese architecture. He attempts neither a history nor a detailed analysis of construction. His primary concern is to give a comprehensive explanation of the spiritual and constructional elements, which he does through the interrelation of a succinct text and manifold illustrations. Although concise, the text presents the background material clearly for both architect and layman.

He shows the blending of Chinese Zen Buddhist tradition with native Shintoism which takes place from the 15th through the 18th centuries. Behind Japanese architecture lies Teaism, originated by the Zen Buddhist priests.

Basic attitudes of Japanese architecture are emphasized: space should give significance to the structure which encloses it; in true architecture empty space can express personality and spiritual atmosphere; the Japanese find perfection of form in simplicity and the inconspicuous, and behind each form they seek for the

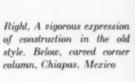
### A REFRESHING GLANCE AT WESTERN FOLK DESIGN

By EDGAR KAUFMANN, JR.

Sibyl Moholy's new book is the most refreshing and enlightening view of architecture I've encountered for some time. It is a book about folk architecture in the western hemisphere, observed by a keen eye, a well-stocked mind, and a lively heart. Architecture here is understood to be a vigorous, constructive expression of the way people give themselves a better life. What a relief it is not to have to consider cosmological, technological and psychological factors bearing down on the broad forehead of some architectural Zeus, about to give birth to another Athena.

From the free distance of folk practice, the author is able to cast a glance now and then at some of the favorite clichés of modern architects and the professors of their art. The view she gets is a rude one, and one conveniently ignored as a rule. All those who think modern architecture is unhealthily pompous will rejoice to read her report, however. And all who like strong, simple architecture will enjoy her samplings from the Americas.

Mrs. Moholy has been in America for twenty years now, but she benefits from the enthusiasm of an addict (Continued on page 62) Native Genius in Anonymous Architecture. By Sibyl Moholy-Nagy. Horizon Press, Inc. (N. Y.) 1957. 223 pp., illus. \$7.50







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WEST PENSACOLA HIGH SCHOOL Architect: FRANK J. SINDELAR, A. I. A. Pensacola, Fla. Consulting Engineers: EVANS & PHILLIPS, Birmingham, Ala. Contractor: DYSON & CO., Pensacola, Fla. Electrical Contracting: BAROCO ELECTRIC CONSTRUCTION CO., Pensacola, Fla.

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Architect: VICTOR GRUEN & ASSOCIATES, INC., Detroit, Michigan.

Sunshades of BORDEN pressure-locked aluminum grating permit passage of light and air while screening strong sunlight at Mooseheart High School, Mooseheart, Illinois.

Architect: L. Cosby Bernard & Company, Hammond, Indiana.

Large panels of BORDEN pressure-locked aluminum grating support company name over entrance of Lima, Ohio Ford Motor Company engine plant.

Architect: F. A. FAIRBROTHER & GEORGE H. MIEHLS, Architect & Engineer

- ALBERT KAHN ASSOCIATED ARCHITECTS & ENGINEERS, Consultants, Detroit, Michigan.
- BORDEN riveted aluminum grating provides strong, safe footing for cameramen atop this NBC color television truck.
- Unusual door of BORDEN pressure-locked aluminum grating at service entrance to the Florsheim residence in Chicago, Illinois.

Architect: BERTRAND GOLDBERG ASSOCIATES, Chicago, Illinois.

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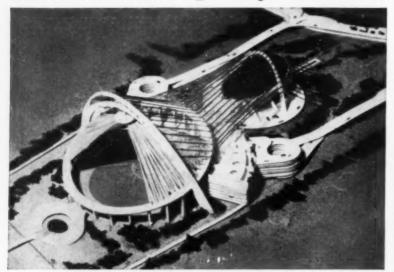
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## MARS outstanding design SERIES



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While it isn't always true, an interesting approach often results in a good design, as in these twin allweather stadia designed by Harry Barone and Arnold Horn, Pratt architecture students. Each bowl would be umbrella'd by its own tentlike roof of translucent plastic, hung from the center of soaring arches. Accordion-pleated, these roofs are planned to fold together out of the way in fair weather, their lower edges riding along the rims of the bowls. Cables that guy the arches form a decorative pattern tying the two stadia together. The big football-baseball bowl would hold 65,000 spectators; the smaller, 20,000.

No matter which of today's bright ideas become tomorrow's reality, it will be as important then as it is now to use the best of tools when pencil and paper translate a dream into a project. And then, as now, there will be no finer tool than Mars-from sketch to working drawing.

Mars has long been the standard of professionals. To the famous line of Mars-Technico push-button holders and leads, Mars-Lumograph pencils, and Tradition-Aquarell painting pencils, have recently been added these new products: the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman's" Pencil Sharpener with the adjustable point-length feature; and—last but not least-the Mars-Lumochrom, the new colored drafting pencil which offers revolutionary drafting advantages. The fact that it blueprints perfectly is just one of its many important features.

> The 2886 Mars-lumograph drawing pencil, 19 degrees, EXEXB to 9H The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Marslumochrom colored drafting pencil, 24 colors.





at all good engineering and drawing material suppliers

#### REQUIRED READING

(Continued from page 58)

#### . . . . Japan

"natural, organic, and self-evident." The interior of a Japanese house shapes the exterior and forms a "unified artistic expression in which the spirit of Zen has been made apparent to the senses."

Much attention is given to Mies van der Rohe, who exemplifies to the author a contemporary architect who does not create meaninglessly.

Aims of this book are to present the underlying inspiration of Japanese architecture and to indicate its significance for our contemporary architecture. Mr. Blaser attempts to convey the fundamental Japanese principles which we can use in our own spiritual context.

Many facets of Japanese character are delineated by the author despite limitations naturally imposed by the focus of the book.

Mr. Blaser makes evident the spiritual qualities of the Japanese way of life and their permeation of Japanese architecture. He speaks of some specific fundamentals used in our contemporary architecture. He does not call for an "objectification" of spirit of our time, but he advocates an architecture where the spiritual quality of a building can aid in the solution of the problems of

#### . . . . Folk Design

who started late, with a mature approach toward her habit. Earlier training, however, will out, and it is not surprising to find the first fifty pages of her book Germanic to a degree. Too much is attempted in the way of generalizations and "background" to hold up under scrutiny; but after the fifty pages are over, real experience and real seeing take over.

Then Mrs. Moholy becomes a guide such as one never finds when visiting abroad; one full of unexpected insights and unhackneyed enjoyments. She indulges in xenologies, not without some reason; these are explained in the opening essay. Otherwise the reader might do well to read this section last. The photos, mostly taken by the author, are good enough to let the reader follow what is being observed; a few are excellent in their own right. A book of sweet and sour delights, well worth

(More reviews on page 396)

# Bounce on it!

### and Feel the Cushioned Flex of KREOLITE Gym Floors

With apologies to Pepsi-Cola, we are saying "KREOLITE, the floor with more bounce to the ounce".

It so aptly describes KREOLITE FLEXIBLE STRIP End Grain Wood Block Flooring with its built-in cushioning resiliency.

Kreolite has other most wanted features that make it a better gym floor; Durable Beauty, Easy and Economical to install and maintain . . . it's safer too, because it's splinter-proof.

Liked by players and coaches and preferred by budget conscious school officials, Kreolite will prove to be the most satisfactory floor you ever specified. Write today for performance data and specifications. Take your first step to better floors for gyms, multi-purpose rooms or shops.

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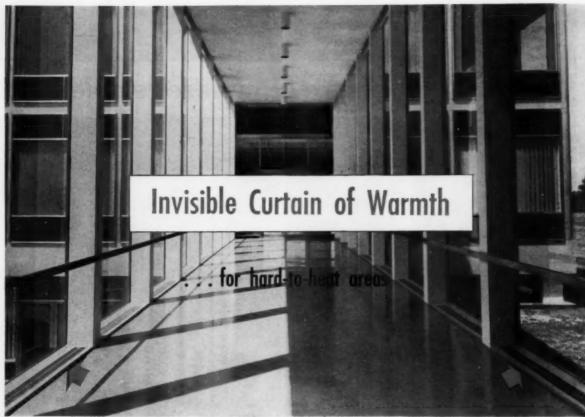
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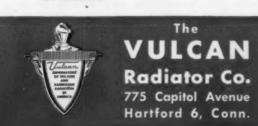


## With Tulcan Fin-Tube Radiation

Set in the green, rolling hills of suburban Hartford, the new Connecticut General Life Insurance Company building is truly a modern classic - a marvel of planned efficiency dedicated to the working comfort of its employees.

Continuous glass areas, such as the walkthrough shown above, called for positive, invisible warmth. Vulcan Fin-tube Radiation (installed between floor levels) was selected.

Standard of the industry, Vulcan continues to provide quality heating at lowest cost for commercial and industrial structures throughout America.





Connecticut General Life Insurance Company, Bloomfield, Skid-more, Owings & Merrill, architects, New York; Turner Construction Company, contractors, New York; Syska & Hennessy, mechanical engineers, New York.

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Gentlemen:	Please forward your FREE 32-page catalog "VULCAN Linovector"
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## Square D--wherever electricity



# NOW IT'S AN EVEN GREATER EXPERIENCE TO VISIT COLONIAL

More than eight million people have visited this enchanting Virginia spot where the course of early American history was charted. Now, through the facilities of Colonial Williamsburg's new Information Center (opposite page), guests are provided with every conceivable

convenience and comfort to further enhance their stay. • Among the Square D equipment used throughout these new buildings—safety switches, motor starters, limit switches, relays, pushbuttons, control centers, switchboards, panelboards, duct and unit sub-stations.



SQUARE D COMPANY

Architectural work executed by the Division of Architecture, Construction and Maintenance of Colonial Williamsburg, Inc., under direction of A. Edwin Kendrew, F.A.I.A.

Consulting Architect • Harrison and Ambrovitz, New York City

Mechanical and Electrical Design Engineers • Wiley and Wilson, Richmond, Virginia

Electrical Contractor • Chewning and Wilmer, Inc., Richmond, Virginia

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## SQUARE D ELECTRICAL EQUIPMENT THROUGHOUT THIS BEAUTIFUL. FUNCTIONAL INFORMATION CENTER!



For perfect viewing, theatre seat rows are four feet wide and rise on sharp one-foot elevations. Threefoot barriers between rows provide full visibility, unbroken by persons in front.

Information Center, through exhibits, maps, and personal direction, "conditions" visitors for their tour of Colonial Williamsburg. Twin theatres with world's largest indoor screens, offer continuous showings of "Williamsburg... The Story of a Patriot." Free bus service between the Center and the restored area. Parking for 1000 cars. Square D equipment in this area ranges from pushbuttons and relays to panelboards, bus duct and matched switchboard-control center.



Motor House, located on 12acre wooded plot, provides 200 air-conditioned rooms. Lounge, recreation rooms and three swimming pools for guests' enjoyment. Square D loadcenters, panelboards and unit substation serve this motor house area.



Cafeteria Building, adjacent to Motor House and Information Center, serves 600 guests per hour. Spacious lounge. Gift shop. Air-conditioned. Square D equipment distributes and controls electricity for kitchen equipment, refrigeration, air-conditioning, and lighting.



One of Square D's matched switchboard-control center installations. This one, in the cafeteria basement, feeds the entire building, serving lighting, air-conditioning, heating and boiler equipment.

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FABRICATION IN ALUMINUM - STAINLESS STEEL and COATED STEEL



Color telephones displayed in the model home of Mr. Hadley's Parkway Manor tract favorably impress home buyers, point up attractiveness of concealed telephone wiring. Here Mr. Hadley (right) discusses the location of a display telephone with Thomas A. Williams of New Jersey Bell Telephone Company.

## "Planned telephone outlets make sense to home buyers"

- says Mr. Charles F. Hadley, Builder, Cape May Court House, New Jersey

"Telephones have become an absolute necessity," says Mr. Hadley, "and today a builder has to provide for them during construction. I put several telephone outlets in every house I build—in the kitchen, in each bedroom, and in the living areas. I don't want my houses to be obsolete or old-fashioned before they're even on the market.

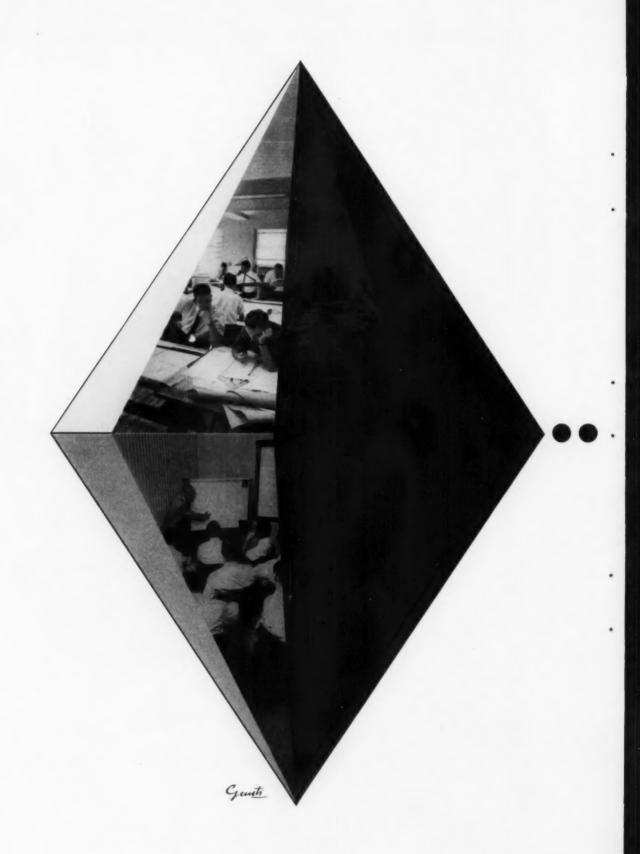
"Planned telephone outlets make sense to home buyers, and what makes sense to a buyer helps sell him. Conveniently placed outlets, plus the fact that telephone wires are concealed in the walls, add greatly to the attractiveness of a house. There's no question in my mind but that planned telephone outlets are important selling points."

Your local Bell Telephone business office will be glad to help you with concealed wiring plans. For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.

Working together to bring people together

BELL TELEPHONE SYSTEM





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Imaginative, energetic, experienced men...capably bringing to life a major new source of Aluminum—one with an initial annual capacity of 340 million pounds!

Their tools: vision, the benefit of more than 40 years of Olin Mathieson experience in producing non-ferrous metals, and an investment of \$300 million.

Their goal: Quality and Service standards unique in the Aluminum industry.

What do these new standards mean? Custom-Tailored Aluminum . . . with finishes and tolerances tailored specifically for you, to meet your individual production needs. Competitively superior Aluminum that will simplify your manufacturing operations and give you maximum output for each pound consumed. And with it: Outstanding Technical and Sales Service—the kind that values your continuing satisfaction as the most important criterion of success.

This is Olin Aluminum-growing and expanding to meet your needs.

For more information about Olin Aluminum, write: Aluminum Division-Sales, Olin Mathieson Chemical Corporation, 460 Park Avenue, New York 22, N. Y.

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ALIN



## TOLEDO TRUST COMPANY Toledo, Ohio

standardizes on ADT Protection from main bank to seventh branch with these Central Station Services:

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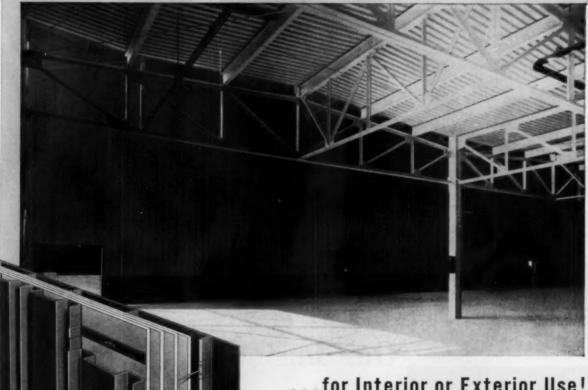
One of the finest bank buildings in its class in America, the new branch of the Toledo Trust Company, illustrated, meets the highest standards in protection. Like the two banks downtown and five other suburban branches, it uses ADT Protection Services to guard against attacks by burglars and bandits and to summon aid in any emergency.

Architects specializing in bank design specify ADT Protection because they know that the equipment is of the highest quality and behind it is an organization concerned only with the operation and maintenance of protective signaling systems...assuring care-free operation and prompt and effective action.

Whether your project is large or small, there is an ADT Protection Service to meet every requirement. Thousands of concerns from coast to coast depend on ADT for better protection against fire, burglary, holdup and other hazards, and at lower cost

Our local sales representative will be pleased to assist you with your specifications. Call us if we are listed in your phone book; or write to our executive office.

# Underwriters' Rated FIRE WALLS



## ... for Interior or Exterior Use!

Mahon Underwriters' Rated Metalclad Fire Walls are now available for use as interior dividing fire walls or as exterior curtain-type fire walls. They can be installed in old or new buildings, of either steel or reinforced concrete construction, where a fire hazard may exist, or where the requirements of Fire Insurance Underwriters or Building Codes must be met. The Mahon Metalclad Fire Wall is field constructed. It has been tested by the Underwriters' Laboratories, Inc., and has been given a Two-Hour Rating for use as either an interior or exterior fire wall. When employed as an exterior wall, Fiberglas insulation can be inserted between the interlocking ribs of the inner wall plates, thus providing insulating properties superior to that of a conventional masonry wall with furred lath and plaster. Exterior Wall Plates may be Aluminum, Stainless Steel or Enamel Coated Cold Rolled Steel. The important feature of the Mahon Fire Wall is the Impaling Clip with its Stainless Steel Spike (Patents Pending) which permits construction of the wall with only .0048 sq. in. of throughmetal per sq. ft. of wall area. Mahon engineers will cooperate fully in supplying information and assistance in adapting this product to your particular requirement.

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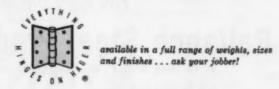
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Over 100 years of standing the test of time! . . . Ruggedly made of wrought steel to give long use . . . skillfully finished to take all kinds of weather.

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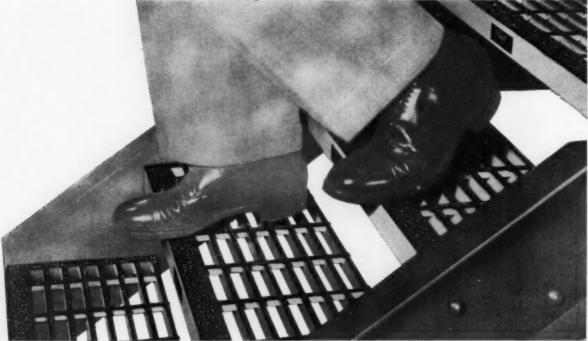
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1,000,000 square feet of BALANCED

IN THE NEW
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New \$20,000,000 Douglas Aircraft Company DC-8 Jetliner manufacturing plant, Long Beach, California.

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Means Quality

You may not have a million square foot job, such as the new Douglas Aircraft DC-8 Jetliner plant on your boards, but you will want to know that McQuay "HC" heating and ventilating units can handle and can produce balanced comfort over a large area—economically and practically. In the case of this Douglas plant, there are 124 McQuay HC-323 units.

The units are designed for use with high-pressure, high-temperature water, the temperature ranging from 210° F. to 400° F. with corresponding pressures.

The units are mounted at 56 foot elevation and strategically located to insure a 25 f.p.m. air motion at a 6 foot elevation.

Universal nozzles helped considerably in balancing the job by giving the desired air distribution over the entire floor area.

These versatile and flexible McQuay units can do the same for you on any job. Call in the McQuay representative near you,

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SHOWN: Quartered Benge Weldwood Paneling, Occidental Life Insurance Company, Raleigh, N. C. Architects: Kemp, Bunch and Jackson, Jacksonville, Fla.

## Now-Weldwood offers you 3 ways to get the beauty of real wood paneling

Office walls "talk" about their owner all day long. You can be sure that they say the right things when they're wood paneled with Weldwood. From rich, glowing Walnut to modern-as-today Birch, Weldwood walls are handsome, warm, distinctive. And they cost much less than you might think.

FREE WELDWOOD BOOKLET, "Functional Beauty for Business and Institutional Interiors." Write for your copy and list of Weldwood lumber dealers in your area. Or, we will be glad to have a Weldwood Architects' Service Representative consult with you — no obligation. United States Plywood Corporation, Dept. ARI0-57, 55 W. 44th St., New York 36, N. Y.

WELDWOOD MOVABLE PARTITIONS give real wood beauty, let you change office layout overnight. Mineral core stills noise. Shown: Korina® Weldwood Partitions, Ford Motor Company's Staff Building, Dearborn, Mich. Architects; Skidmore, Owings & Merrill, N. Y.



Real wood is easy to keep beautiful — needs only occasional waxing. A satisfied client is good reason to suggest Weldwood real wood paneling, partitions, or Flexwood. You can see a complete display of over 70 types and finishes of Weldwood Paneling at any of our 87 offices in principal cities.

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WELDWOOD FLEXWOOD® — selected wood veneer on cloth backing — is quickly installed to any hard, smooth surface, flat or curved. In more than 40 woods. Shown: Budget-priced Random Grade Birch in Conference Room, Veterans Administration, Washington, D. C.



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THAT'S WHY ARCHITECTS SPECIFY

## CUPPLES ALUMINUM WINDOWS

FOR NEW BUILDING IN MEDICAL CENTER



High on the list of outstanding features in the seven-story addition to the Maine Medical Center are Cupples' Series 500 fixed and double-hung aluminum windows. This is another example of the wide acceptance of Cupples Aluminum Windows where sound design and precision fabrication are of prime importance.

The Cupples' 500 is proved to be stronger, heavier, more monumental and massive than other commercial double-hung windows, yet is competitively priced. Weather-tight, never needs painting or maintenance, operates silently—easily.

Cupples is a foremost designer and manufacturer of many types of commercial and residential aluminum windows, curtain walls, doors, Alumi-Coustic grid systems and special ornamental products. Our catalogs are filed in Sweet's.



PRODUCTS CORPORATION

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# Streamline QUALITY COPPER TUBE chosen for these magnificent apartments . . . the CAPRI AIRE and PHOENIX TOWERS . . . the ultimate in comfortable, carefree, modern living

These two fabulous co-operative apartments . . . one at Phoenix, Arizona, the other in La Jolla, California . . . are setting the pace for a new kind of casual American living. Architects have designed both these luxurious buildings for an absolute maximum of comfort and operating efficiency. It was only natural that copper, the modern

piping material, was used for plumbing systems in both projects... a decision certain to pay handsome dividends in trouble-free service for the life of the building. Rust-proof and practically clogproof, as well, copper's ease of installation is credited with keeping overall cost-of-installation below that of competitive material.



La Jolla Capri Aire, at La Jolla, California, combines outdoor and indoor living in a delightful grouping of lavishly-finished co-operative apartments in which quality materials and careful workmanship are combined to produce these attractive dwellings with distinctive California styling. Lionel V. Mayell, who has created a number of these beautiful co-operatives in other western cities is the developer of the Capri Aire project. The general contractor is the Del Anderson Construction Co., San Diego, and plumbing and heating installation is being handled by Ben Huntington and Sons, also of San Diego. These one-, two-, and three-bedroom apartment homes feature sound- and weather-conditioning, a swimming pool, ultra-modern radiant heat, and . . . of course, miles of Mueller Brass Co. Streamline copper tube.

In the Capri Aire co-operative, space-saving copper tube in long standard lengths is easy to handle and quick to install.



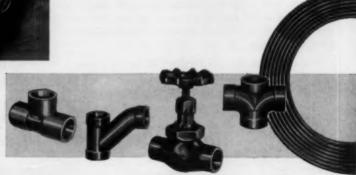


The \$3 million, 14-story Phoenix Towers (above) ... a 60-apartment co-operative unit in Phoenix, Arizona, was designed by Ralph C. Harris. The Del C. Webb Construction Co. was the builder, and Ralph W. Applegate Realty & Investment Co. of Chicago is the agent for the building. John Armer, the plumbing and heating contractor, points with understandable pride to this carefully-installed system. Armer's general superintendent on the Phoenix Towers installation was Mr. Bud Lindquist. In reviewing the project, Lindquist was extremely enthusiastic about copper, both from a standpoint of overall economy of installation, ease of handling, and the saving of valuable space as well. Little wonder, then, that the use of copper for supply and drainage systems is constantly increasing!

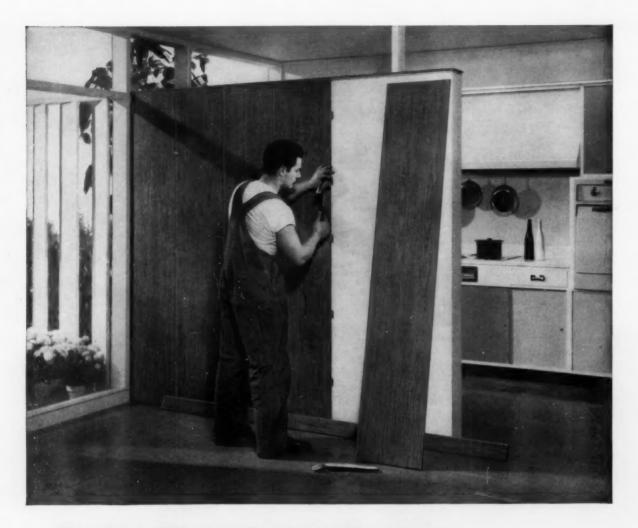


There is a complete range a creamline tube and solder-type fittings for every fallation need. Versatile, easy-to-install copper add the finishing touch to the master plumber's finest with in both drainage and supply. Send today for ki. No. 15 containing helpful information on copper for a binage, and Mueller Brass Co.'s catalog on Streamline apper tube and fittings, too. These two guides will help you plan better supply and drainage systems the modern way.

Gleaming copper drain lines from lavatory and closet in the Phoenix Towers co-operative provide valuable evidence to buyers of these apartment-homes that the builders have lavished more than mere extraneous beauty on the construction of these "apartments of the future". Long-lasting Streamline quality copper, like the drainage lines shown here, will assure years of complaint-free service and reliability.



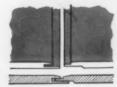
MUELLER BRASS CO. PORT HURON 8, MICHIGAN



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You'll cut days off completion time, add customer appeal with new Marlite Plank and Block. This easily-installed paneling is applied over plaster, plasterboard, plywood or existing wall surfaces with adhesive. Simple clips speed installation; make fitting easy. And Marlite's soilproof melamine plastic finish stays clean and bright with an occasional damp cloth wiping; drastically reduces maintenance time and expense.

Planks (16" x 8') and Blocks (16" square) are available in modern, new Loewy-styled colors plus distinctive wood and marble patterns. Before your next building or remodeling project, get complete Marlite details from your building materials dealer, Sweet's File, or Marlite Division of Masonite Corporation, Dept. 1005, Dover, Ohio.



Marlite's exclusive tongue and groove joint eliminates the need for joint coverings, conceals all fastening, adds the perfect finishing touch to every interior. This  $\chi_b^{\prime\prime\prime}$  material combines beauty and ease of installation with low maintenance.



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plastic-finished paneling

MARLITE IS ANOTHER QUALITY PRODUCT OF MASONITE® RESEARCH



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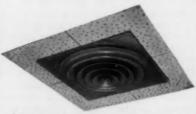
The H&C No. 16 (step-down type) Ceiling Diffusaire, and its companion piece No. 15 (flush type) Diffusaire give you full 360°, draftless air distribution, particularly important in cooling. And with the H&C ADAPTER SQUARE, which harmonizes perfectly with acoustical tile ceilings, you have the "Round and Square" diffuser problem completely licked. There's no necessity of stocking more than one type diffuser. A butterfly damper with screwdriver adjustability from below is available with these diffusers.

Fer all other installations H&C TRIPL-AIRE and FIXT-AIRE Registers and Grilles provide every desirable factor entering into the achievement of perfect air conditioning: There are 10 types, 26 standard sizes of single and multi-deflection Grilles and Registers . . . providing 260 possible horizontal and vertical deflection combinations . . . plus a wide range of intermediate sizes. Consequently, there's never a need to compromise . . . the EXACT deflection is always available to you. Perfect volume control, equal distribution over the entire register face, "Decorator Gray" finish and prompt deliveries are other features that contribute to total satisfaction.

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MULTI-DEFLECTION REGISTER. Vertical
face bars, horizontal secondary bars,
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And you can cut space needs 27%

VERSATILITY and low-cost performance make Modine cabinet units ideal for heating and ventilating commercial, institutional and public buildings. They provide fast, quiet, positive air distribution. And where space is limited, size of units can be reduced more than 25% by using Modine Type W coils and operating on hot water instead of steam.

They can be installed upright or inverted . . . fully exposed, recessed or concealed . . . on walls, floors or ceilings. Some models are for steam or hot water heating—others heat with hot water, cool with chilled water. Some can be installed with ducts.

Easily attached accessories permit ventilating with fresh outside air. When so equipped, cabinet units meet many requirements where the expense of unit ventilators is not warranted.



Series of Type BF units provide quiet, uniform heat distribution in this spacious, modern church.



Adaptability to ceiling mounting makes Modine cabinet units ideal where wall space is limited.



Here's how the use of Type W coils with hot water can reduce unit size. Dotted lines indicate space steamcoil units of equal capacity would need.

#### Choose from seven distinct cabinet types

FLOOR

| COOR RANKETING UNIT
| COOR ROUNTING CHILT
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Call the Modine representative listed in your classified phone book. Or write to Modine Mfg. Co., 1510 DeKoven Ave., Racine, Wis., for Bulletin 557.





Cobinet units

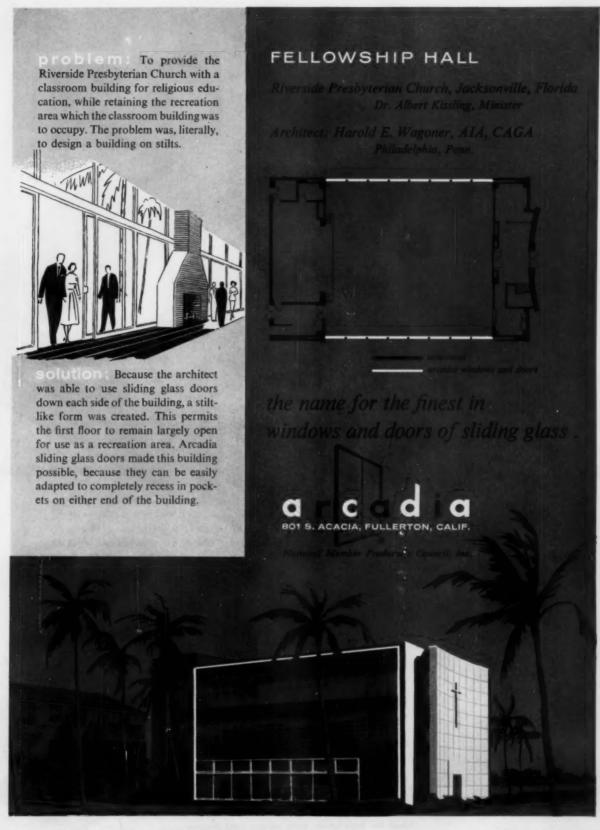


Steam & hot water

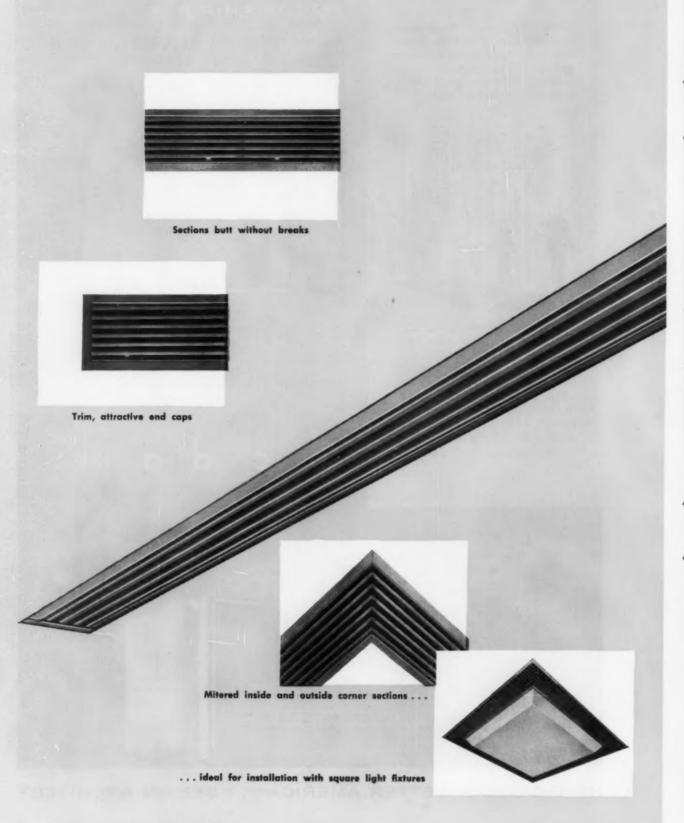


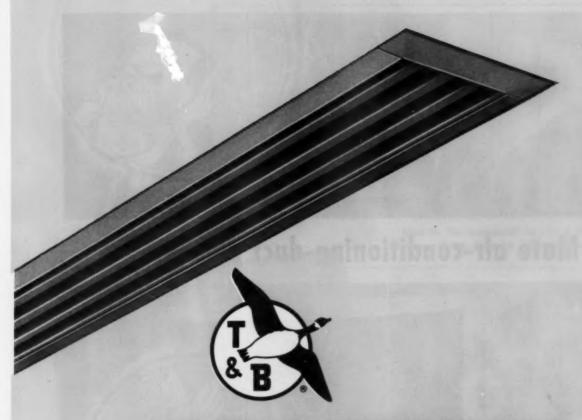
er Duct furnaces





HELP BUILD A BETTER AMERICA . . . SEE AN ARCHITECT





## LINEAR DIFFUSERS

#### preserve the clean-line symmetry of modern architectural design

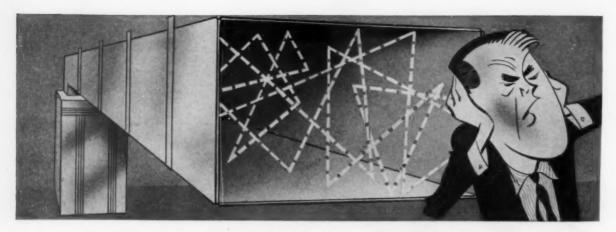
For installation on ceiling or sidewall, Tuttle & Bailey Linear Diffusers are designed to maintain the functional straightline beauty of modern architectural concepts. Particularly effective when installed in continuous runs, individual sections butt neatly without breaks, and mitered 90° inside and outside corners permit extension of the clean-line symmetry on perimeter applications. A unique yet simplified method of installation

eliminates the need for screws in the margin of the diffuser. Units can also be furnished with a recessed plaster frame which means only the unbroken lines of the louvres are visible.

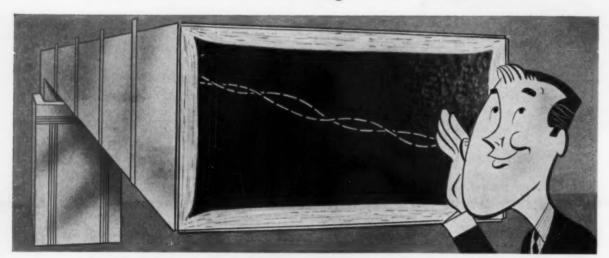
Tuttle & Bailey Linear Diffusers may be installed on either the supply or return portions of the system. They are available as one-way or two-way blow units in 18", 24", 30", 36", 48", 60" and 72" lengths.







## Mute air-conditioning-duct noises...



## with black-vinyl-coated MICROTEX

New duct liner has high acoustical and thermal efficiency... plus the moneysaving advantages of pigmented vinyl coating

Microtex Duct Liner effectively absorbs mechanical noises—particularly in the 250 to 4,000 cps range, where most airconditioning and heating-system noises occur. It efficiently insulates warmand cold-air ducts against heat transfer. When ducts are lined with Microtex, the sheet metal itself acts as a vapor barrier.

L·O·F Glass Fibers' Microtex Duct Liner saves time and money at the job site. Its black vinyl coating saves painting inside ducts, near grilles or large registers; eliminates the possibility of paint flaking off into the air stream. Pigmented vinyl quickly shows inspectors that Microtex Duct Liner is fully coated to resist air erosion, even at peak velocities. When ducts are lined, exterior surfaces are easy and economical to paint or finish as desired.

Microtex Duct Liner cuts costs in the shop, too. It's strong and resilient . . . easily withstands routine shop handling without damage. Microtex is semirigid, yet light in weight . . . easy to cut, pleasant to handle. Black vinyl clearly indicates the air-stream side as Microtex is applied to the sheet metal. Resiliency of Microtex permits forming insulated metal sheet in the brake without damage.

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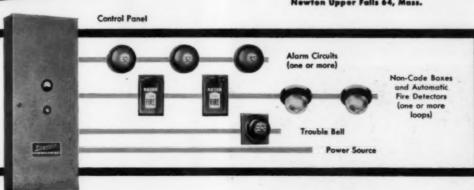
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Hotel Hartford Statler (a Hilton Hotel), Hartford, Connecticut Architect: William B. Tabler, New York, New York Contractor: George A. Fuller, New York, New York Panel Fabricator: Seaporcel Metals, Inc., Long Island City, New York

Marriott Motor Hotel, Washington, D. C.
Architects: Joseph G. Morgan and Edwin Weihe, Washington, D. C.
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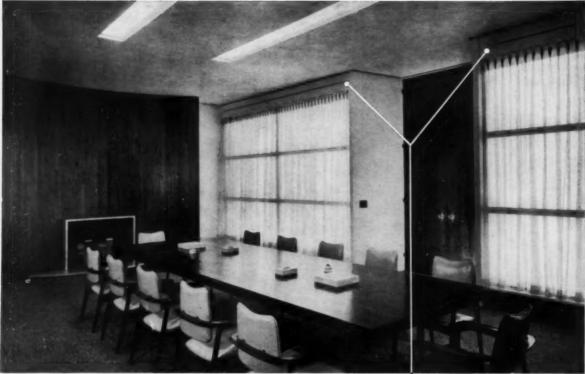


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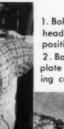
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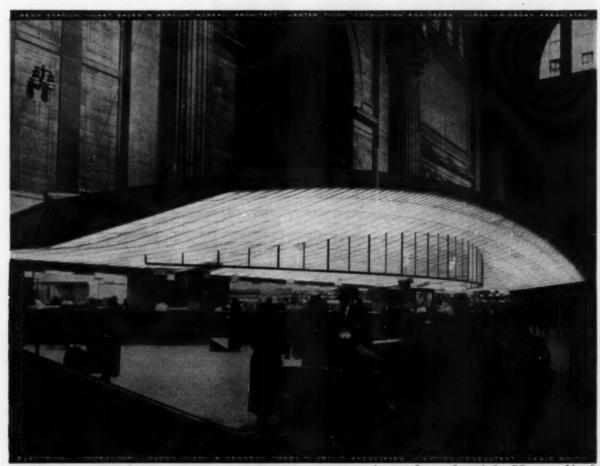


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5. Positioning Bayley adjustablewidth mullion.

6. Positioning window-panel using interlock groove as slide.



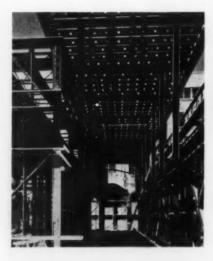


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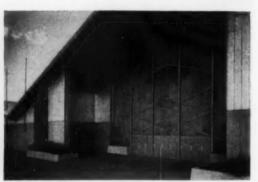
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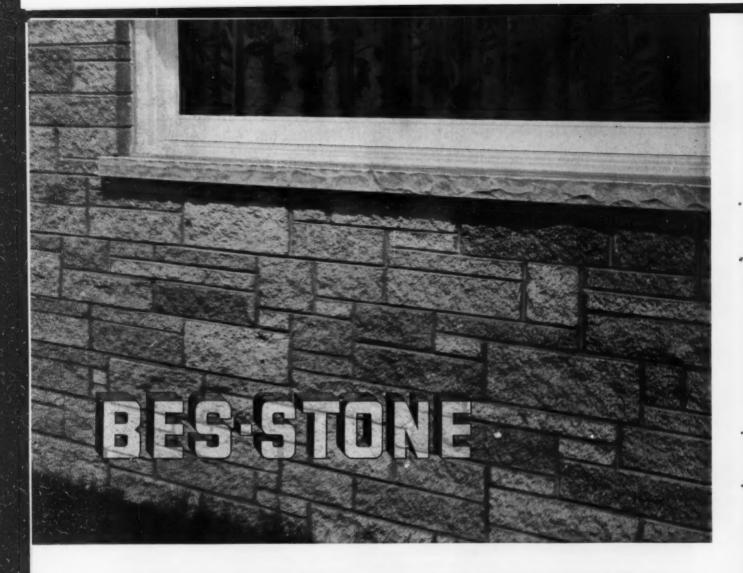


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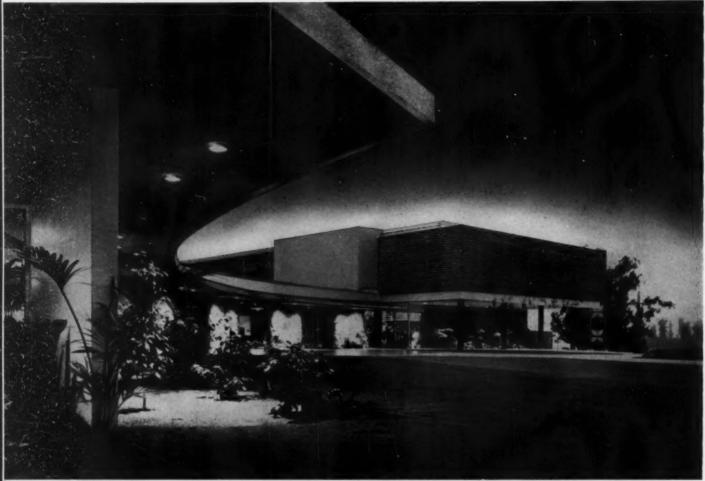
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THE NEW ADMINISTRATION and Mortuary Buildings, Rose Hills Memorial Park, Whittier, Calif. Architects and Engineers: Albert C. Martin & Associates, Los Angeles. General Contractor: L. E. Dixon Company, San Gabriel. Ornamental Bronze Fabricator: A. J. Bayer Company, Los Angeles.

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GENERAL VIEW of the front of the building. Extruded shapes of Anaconda Architectural Bronze were used for the decorative and functional louvers covering the second floor at the right in illustration above (see detail on facing page). The metal fascia is Anaconda Red Brass.

THE WARM COLOR OF an Extruded Bronze Shape for the handrail, combined with Red Brass Rectangular Tubes for the railing of this open stairway, provides a pleasing contrast with the surrounding masonry, wood paneling and living plants of the indoor tropical garden.



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"The use and appeal of bronze is historic," says Albert C. Martin, Jr., of Albert C. Martin & Associates, Los Angeles, architects of Rose Hills Memorial Park Administration and Mortuary Buildings. "The architect who molds its traditional character into his design achieves an element of strength, overlaid

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Architectural Bronze and complementary copper alloys give zest to the architectural composition and enhance the beauty of other building materials whether they be stone, glass, or other metals. The architect will find that copper alloys in extrusions, drawn shapes and sheets offer almost unlimited opportunities in design and color effects.

Architectural alloys of copper, when exposed to the weather, will acquire the rich, soft coloring of the patina. Only occasional cleaning to remove dirt and grime is necessary to maintain the beautiful appearance of the weathered metal. If the weathered effect is desired at the time of installation, the patina can be produced artificially by the architectural metals fabricator. Or, if desired, the bright but warm colors of the metals may be maintained by applying a protective, colorless surface coating and renewing it as required.

As a leader and pioneer in producing extrusions and other forms of copper alloy metals for architec-tural applications, The American Brass Company has the experience to help you achieve outstanding designs in Copper, Red Brass, Architectural Bronze, Yellow Brass and Nickel Silver. For further information write: Architectural Service, The American Brass Company, Waterbury 20, Conn.

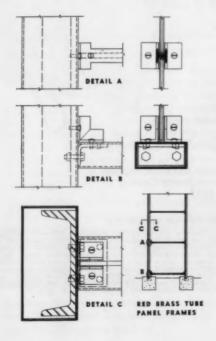
## ANACONDA

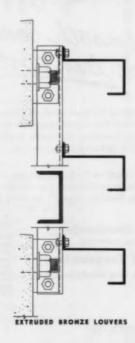
ARCHITECTURAL METALS

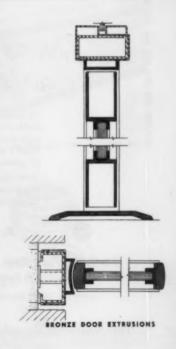
MADE BY THE AMERICAN BRASS COMPANY



CURVED SECTION OF JAMBS and the stiles, rails, push bars and thresholds of exterior doors are bronze extrusions. (See detail below.)









How to get smooth concrete surfaces at less cost

By simply coating plywood forms with A. C. Horn's Formfilm your contractor can get a finish that eliminates 85% of normal concrete rubbing and cleansing, because Formfilm eliminates grain marks and oil stains.

Thus a saving of 10¢ per square foot is possible. (This is based on 50,000 square ft. area of poured concrete.)

You also can save as much as 25% in painting costs on material and labor, because the denser surface accepts paint better. For details on Formfilm see Sweets' Catalog, Construction Materials Section, page 17, or write Dept. H53-1015.



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Sun Chemical Corporation
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## WHY WEIRZIN'?

"It resists rust, forms easily and holds paint."

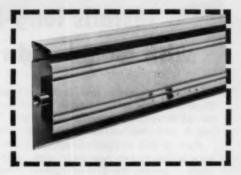
So reports the Vulcan Radiator Company, Hartford, Connecticut.

"We must bend Weirzin electrolytic zinc-coated steel like a pretzel in producing our high quality Trimline baseboard radiators. Weirzin goes right along with us—doesn't balk one bit. Our finished baseboard radiators have a constant flow of bends and turns. But in forming them, not one speck of Weirzin's protective zinc coat flakes or peels off. This assures us that recoating of our radiators is a thing of the past and that rust is a real 'goner' having no bare steel to feed upon. And, chemically treated Weirzin takes and keeps paint as if it were the natural thing to do. A decided advantage over other metals that can 'take' paint but don't hold it all."

That's Weirzin electrolytic zinc-coated steel sheets! They never give rust a start, thereby eliminating any future corrosion problem. They have a natural paint bonding surface which means the end product has a beautifully painted finish that will fit into any décor. They have the strength of their steel base which means a longer life of worry-free service.

What better characteristics could any product have to meet the exacting demands of progressive architects, builders and contractors?

See how Weirzin can meet your building requirements—better! Just write Weirton Steel Company, Dept. Q-26, Weirton, West Virginia, for your free informative booklet.





#### WEIRTON STEEL COMPANY

WEIRTON, WEST VIRGINIA

a division of





American Model M. E. (Monel End Ring) Rectangular Bulk Sterilizers.

American Dressing Sterilizer.

All-new Central Supply plans to stay new...

# Installs long-lasting American Sterilizers with Monel end rings and Nickel-Clad chambers

There's a gleaming new look to Central Supply at Huntington Memorial Hospital, Pasadena, California. A look that will last and last.

Part of this stepped-up appearance is due to two new bulk sterilizers — among the first of American's Nickel-Clad units to feature end rings of Monel\* nickel-copper alloy (see arrows). And Monel alloy sparks up the new dressing sterilizer to the right, too.

Look what bright Monel end

rings do for performance and equipment life.

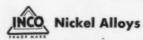
Welded to sterilizing chambers of Nickel-Clad steel, durable Monel end rings have that extra hardness and toughness needed to resist denting and nicking by loading racks and trays. They never chip or flake, either... and won't warp.

Corrosion-resistant, easily cleaned Monel alloy and Nickel-Clad steel stand up against steam and cycling temperatures. Resist corrosive hospital solutions for years. And they're easily kept clean with ordinary scouring powders...saving precious staff time.

Planning to build or remodel?

It will pay you to call on American Sterilizer Company, Erie, Pa., for help in planning your sterilizing set-up. Ask about their hospital planning service for specialized technical departments.\*Registered trademark

The International Nickel Company, Inc. 67 Wall Street New York 5, N. Y.



Nickel-Clad and Monel sterilizers . . . long life, easy to care for



#### FINAL TOUCH-A SURE SOURCE OF EMERGENCY POWER



A modern hotel may be designed with every appointment, every luxury for the comfort of its clientele. But if a power failure makes its electrical equipment useless—even for minutes—guests are certain to be disgruntled. That is why dependable emergency power is a *must*.

The 125-room Hotel Suburban, in Summit, N. J., was built with every modern convenience, but the standby unit originally installed proved inadequate in emergencies. Today the hotel has a CAT\* D318 Electric Set which goes smoothly into operation as soon as any break occurs in the supply of utility power. And whether the failure lasts for minutes or for days, the Caterpillar Diesel runs steadily. It furnishes power for all lights, oil burner pumps, elevators, kitchen and bar equipment and carpenter shop. Patrons don't even know there's trouble.

The D318 Electric Set delivers 60 KW. Other Caterpillar units, self-regulated and externally-regulated, are rated from 30 KW to a capacity fulfilling most needs. They are compact, easily installed and require very little maintenance or adjustment.

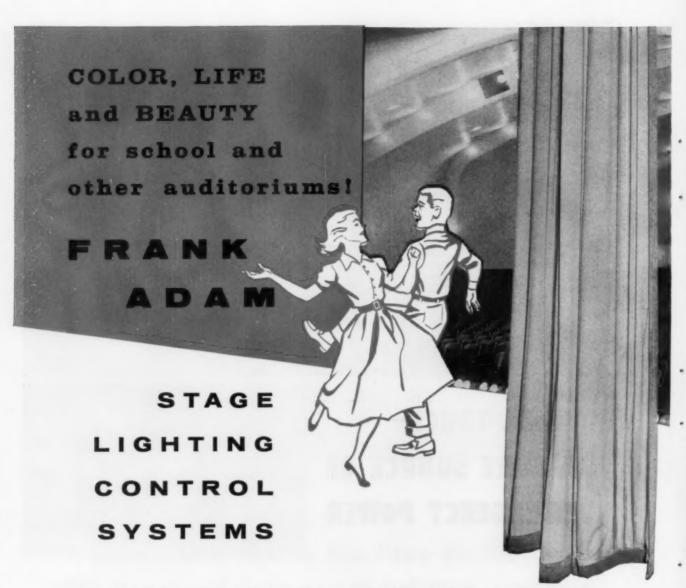
Caterpillar Dealers can give you specifications on the full line of diesel electric sets they sell and service. If you need information on standby power for any hotel, hospital or other public building, we suggest that you talk to your local Caterpillar Dealer.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

#### CATERPILLAR\*



ARCHITECTURAL RECORD OFTOBER 1957



Add to the color, beauty, usefullness and enjoyment of all school, college and other auditoriums you design by including Frank Adam Stage Lighting Control Systems in your plans and specifications.

The result of more than 50 years experience and technical "know how" Frank Adam Stage Lighting Control Systems embody all the latest features in design and construction—factors that have made Frank Adam Controls a popular choice of architects and engineers for School, College and other types of auditoriums—both large and small.

#### Stage Lighting Controls produced by Frank Adam include:

CONTROL BOARDS for Manual Control, Modified Pre-Set Remote Control, Multiple Pre-Set Remote Control, Motor Driven Control, Electronic Tube Control, Mobile Color Lighting Control.

TYPES OF DIMMERS, Auto Transformer, Electronic, Magnetic Amplifier.

Frank Adam Controls are built on the unit basis and can be made to fit any type or size of auditorium. All bear the seal of approval of the Underwriters' Laboratories' Inc., and will give long-lasting and trouble-free service.

For further information about Frank Adam Stage Lighting Control Systems and other products, contact your nearest Frank Adam representative, listed in Sweets or write for Bulletin No. 801.



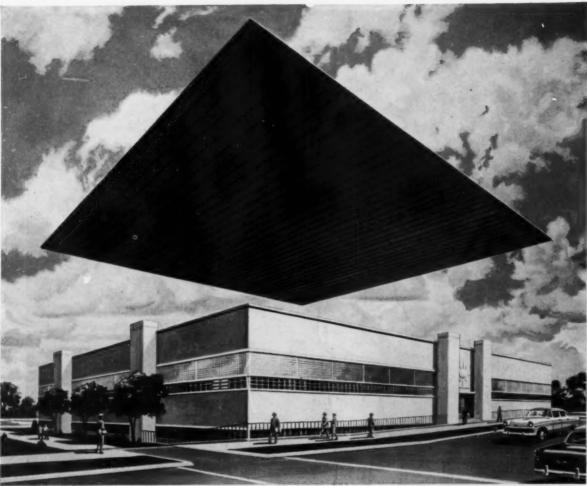


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J-M Aquadam Roofs for low-pitch and dead-level roof decks give the best possible protection.

#### For lasting protection to buildings and contents

Specify Johns-Manville Aquadam® Built-Up Roofs-and be sure

J-M Aquadam Roofs owe their superiority to Aquadam, the modern cementing agent used in the application of the roofing felts. Aquadam, by laboratory test and years of actual performance, is considered the best dead-level bitumen on the market today. It is designed to encompass the best features of coal tar pitch and of asphalt without their weaknesses.

Aquadam Built-Up Roofs employ Asbestos felts for smooth-surfaced roofs, rag felts for gravel- or slagsurfaced roofs. When you specify J-M Aquadam Built-Up Roofs your clients gain these advantages:

- A roof with approximately twice the ability of typical asphalt roofs to retain its weathering properties on exposure.
- A roof that reseals and repairs itself after being subjected to the equivalent of summer roof temperatures.
- A roof that has ductility or the ability to resist cracks from thermal changes or building

expansion and contraction.

A roof that has high adhesive and permanent bonding properties.

Your Johns-Manville Approved Built-Up Roofing Contractor can help you in the planning of Aquadam Roofs. You'll find him listed in the Classified Section of telephone directories.

For further information about J-M Built-Up Roofs, write: Johns-Manville, Box 158, New York 16, New York. In Canada, write 565 Lakeshore Rd. E., Port Credit, Ont.



Johns-Manville congratulates the American Institute of Architects on its 100th Anniversary —Consult an Architect—use quality materials



Johns-Manville



Bolta-Floor offers interior designers a rugged resilient homogeneous-vinyl floor tile . . . in an exceptionally wide range of colors . . . with greater authenticity of pattern. That's why it is fast becoming the favorite of the institutional field.

Bolta-Floor has dimensional stability . . . will not chip, crack, peel or shrink . . . retains its rich original lustre and beauty year after year, even in busy traffic areas. When the demand is for finest quality, the specifications read—BOLTA-FLOOR.



THE GENERAL TIRE & RUBBER COMPANY
FLOORING DIVISION . AKRON 9, OHIO

# NEW Suntile INSTALLS CLEAN AND EASY Cuts Installation



# SETFAST\* Wall Tile WITH STRONGEST BOND Time and Costs



FAST INSTALLATION — Ideally suited for thin-set installation method using either an approved adhesive or self-curing mortar. Where necessary SETFAST may be installed over mortar beds of conventional thickness. No soaking required!



MODERN ECONOMY — 12-tile, factory inspected units cover 1½ sq. ft. Individual operations reduced.



PERFECT SPACING — beautifully precise, automatic alignment and easy handling. SETFAST Wall Tile conforms perfectly to minor irregularities in existing wall surface!

#### **Suntile SETFAST Ceramics**

- in one-by-two foot sheets offer you design versatility with unheard of economy!

Mechanic sets 288 one-by-one inch ceramics at once, perfectly bonded and spaced. He can inspect his work, avoid error, because he installs ceramics face up.

No paper to soak off, no mess to clean. Tile can be grouted immediately! SETFAST ceramic patterns encourage originality in floor and wall design — patterns, geometrics, abstracts, and randoms.

Available from stock, including the famous, exclusive Max Spivak motifs! Send for catalog.

#### CAN OUR SPECIAL DESIGN STAFF HELP YOU?

Our ceramic artists, headed by Harry J. Macke, will be glad to suggest tile applications to your plans or elevations; or put your own tile designs in layout form.

\*Patent Pending



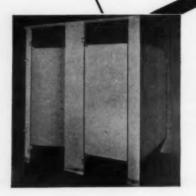
THE CAMBRIDGE TILE MFG. CO.

P.O. Box 71, Cincinnati 15, Ohio

Nicholson Metal Partitions

... strong and long-lasting
... modern, clean appearance
... ready for immediate delivery







When long life and distinctive, modern design are your aim in toilet compartments, specify Nicholson. Maximum gage metals—where you need them—assure the right combination of strength, rigidity and durability. Eliminate bending, denting and other shipping and erection problems. Check these features:

- . Full 20 gage, 1" thick panels and doors
- 11/4 " 16 gage pilasters, with 6-ply fibre core
- Full 18 gage die-drawn moulding

Designs available range from ultra modern to sturdy,

utility units. And you get a lasting finish that meets all Army and Navy requirements.

Nicholson compartments are stocked in standard styles and sizes for fast "from stock" delivery. Types available are: Type A—floor braced; Type AR—overhead braced; Type B—flush style . . . made by W. H. Nicholson and Company, 14 Oregon St., Wilkes-Barre, Pa. Sales and Engineering offices in 98 principal cities.

So, when you're writing up toilet partitions for your next job, specify . . .





# 1,000 Words of Quality Specifications

#### Covering the HIGHEST Industrial LIGHTING STANDARDS in RLM History!

With the addition of just three letters, RLM, you assure lighting units that meet the highest RLM Specifications in history. The many advantages of these specifications are yours on the ten incandescent and fluorescent units most widely used in modern in-dustrial lighting. For each of these ten units, it takes a special RLM Specification of over 1,000 words to cover the minimum RLM quality standards for materials, construction, design, photometric performance, etc.

That is why thousands of electrical contractors, architects, and consulting engineers add the letters RLM to their specifications. They do so, however, with the knowledge that, although each RLM-labeled unit must meet minimum RLM Specifications, each

manufacturer is free to incorporate his own special features to give his fixtures further distinctive ad-

They know, too, that each one of the 1,000 words of RLM quality specifications are also backed by the Institute's Inspection Program. Thru periodic tests by an independent laboratory, this program further assures the buyer that RLM-labeled units will conform constantly and uniformly to every applicable RLM

Adding the letters RLM is a habit you'll never regret. For the full story behind RLM-labeled lighting units, send for your complimentary copy of the latest RLM Specifications Book. Write: RLM STANDARDS INSTI-TUTE, Suite 827, 326 W. Madison St., Chicago 6, Ill.



Higher light output . Lower-cost installation Better protection against glare More seeing comfort . Easier re-lamping Increased brightness control . Reduction of light loss Safety from electrical hazards Protection against rust and corrosion



## When building



or

# both the ear



For better sound control, and appearance—install acoustical ceilings with Securitee Mechanical Suspension Systems.

Acoustical ceilings are as important as electrical fixtures, plumbing or heating in any building. Here's why:

- They control the noise level . . . making quieter working conditions and more efficient workers.
- They are pre-finished in a wide selection of fissured, perforated or textured patterns (eliminating ceiling painting or decorating).
- They eliminate ceiling plastering—meaning less moisture to dry out during construction . . . saving time and money.
- Securitee offers six systems of installation for acoustical ceilings—no need to "shop around"—there's a Securitee System for every type of installation—and it is the finest.

Write for complete information, or see Sweets Architectural File.

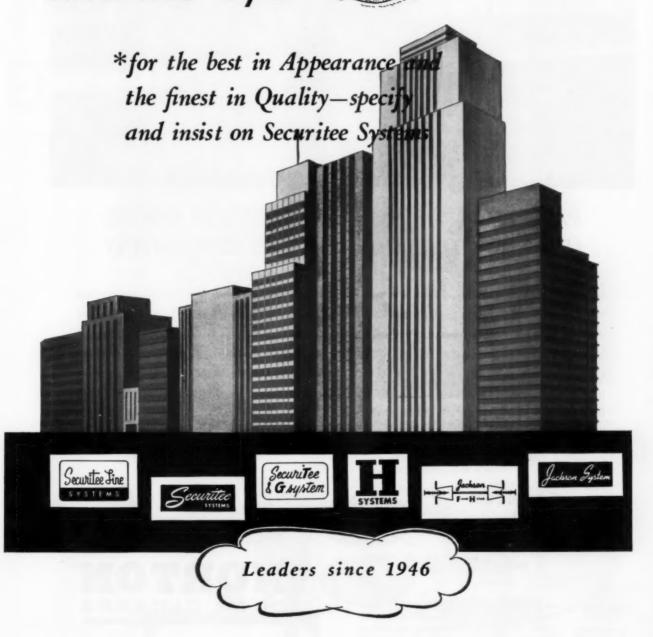
W. J. HAERTEL & CO. The largest and most complete line of Mechanical Suspension Systems.

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West Coast Distributors FREY & HAERTEL, INC. 560 Ninth Street, San Francisco, Calif.

# remodeling and the eye\*





A continuing series of outstanding schools, churches, office buildings, hospitals and industrial structures using NORTON DOOR CLOSERS.



### PACE-SETTER IN MODERN SCHOOL PLANNING USES NORTON DOOR CLOSERS EXCLUSIVELY

Hillsdale High School, San Mateo, California

In planning this outstanding school, the architect looked far ahead to possible future needs. As a result, it will not soon be outmoded either in appearance or in practical provisions for the ever-changing requirements of new courses and new methods of instruction. It looks to the future, too, in every item of equipment, including door closers.

Standard throughout are dependable Norton Surface Mounted Door Closers...up-to-date versions of the sturdy Norton Closers still in daily use after serving continuously up to 30 years and longer in some of America's most famous public buildings. For fully illustrated data on these and other models, consult the current Norton catalog. Write for it today.



A complete line of Norton Surface-type Closers is available for installations where concealment is not essential.



NORTON

DOOR CLOSERS

Dept. AR-107 • Berrien Springs, Michigan

# BACKGROUND FOR LEARNING INTERIORS OF NATCO CERAMIC GLAZE VITRITILE PERMANENT CLEAN MODERN



Natco Ceramic Glaze Vitritile provides sound, fireproof structural walls plus a colorful, wear-resistant interior finish in a single operation . . . at one cost. Years after installation, Natco Vitritile still looks new. Soap and water is all the maintenance it ever needs. Write for General Catalog S-57.

Series	Nominal	Face Size	Tile Face Size	Nominal Thickness
"8W"	8"	x 16"	7¾" x 15¾"	2", 4"
"6T"	51/3"	x 12"	51/4" x 1134"	2", 4", 6", 8"
"4D"	51/3"	x 8"	51/6" x 734"	2", 4", 6", 8"

#### NATCO

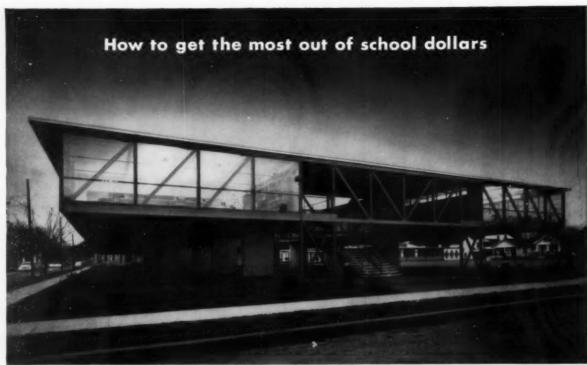
#### NATCO CORPORATION

GENERAL OFFICES: 327 Fifth Ave., Pittsburgh 22, Pa. BRANCH SALES OFFICES: Boston \* Chicago \* Detroit New York \* Philadelphia \* Pittsburgh \* Syracuse N. Birmingham, Ala. \* Brazil, Ind.

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NATCO QUALITY CLAY PRODUCTS



Phillis Wheatley Elementary School, New Orleans, Louisiana; B. M. Dornblatt & Assoc., Consulting Engineer; Charles R. Colbert, Architect; The Keller Construction Co., Contractor.

# ... unusual elevated design saves land welded construction cuts steel cost 15%

#### ARCHITECTS! ENGINEERS!

To help you apply the benefits of welded design to your projects the following aids are for your use: "Procedure Handbook of Arc Welding Design and Practice", over 400 pages devoted to design for structural arc welding—\$3.00 postpaid in U.S.A. "Studies in Structural Arc Welding", sent free to architects and structural engineers. Write us for information.

The designers of this school were faced with the problem of providing more school facilities than the land area would normally contain. They solved the space problem by elevating the building to permit utilization of the area underneath for play and recreation.

Welded design used less material, cut material costs at least 15%.

The use of exposed structural work, another material saving technique, was made more desirable because of the smooth, clean appearance of welds.

Modern architects are turning to welded design to combine beauty and utility at lower cost.



The World's Largest Manufacturer of Arc Welding Equipment

hen welded design Has a cleaner, more modern appearance

Yet saves time and material WHY
aren't all your structures

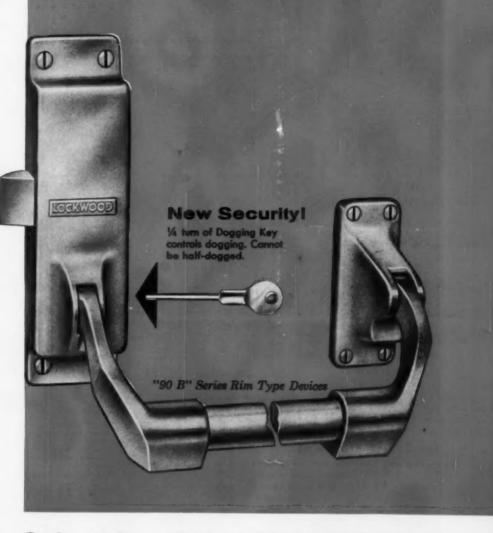
aren't all your structure: designed for welding?

# FIRST JAMB-PROOF devices with FULL SECURITY

New Safety!

LOCK 'N ROLL LATCH

actually floats with any light touch on crossbar



Safe exit . . . full security assured by

#### LOCKWOOD

Lockwood offers complete, new line of Rim, Mortise, Vertical and Concealed Devices, featuring . . .

- Over 20 different functions
- Neat, smooth case design: uniform dimensions and design
- Drop-forged arms for extra strength
- Crossbar adjusts to variations in door width — no rivets, no drilling
- New, streamlined outside trim
- Simplified installation
- Roller strikes, hold-back features available

While door is closed, projection of the new LOCK 'N ROLL LATCH is rigidly retained when crossbar is in its normal, fully raised position. Any light touch on crossbar immediately withdraws all support and the multi-pivoted latch rolls freely into the case.

From outside, when door is closed, the latch is deadlocked and inaccessible to end pressure.

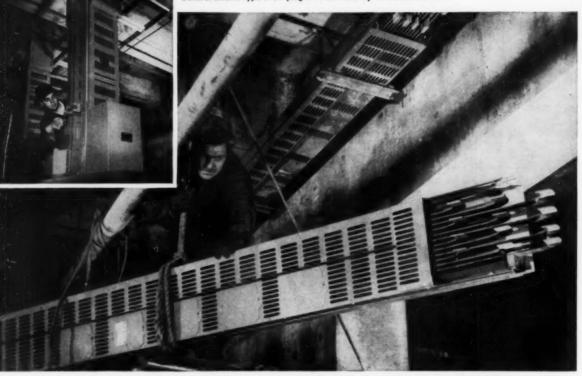
Write for brochure illustrating in detail the many exclusive features of Lockwood panic devices,

LOCKWOOD HARDWARE MFG. CO., Fitchburg, Mass.

#### Over 3½ miles of aluminum busways

supply power to new 34-acre Chrysler stamping plant

General Electric Type LVDP plug-in feeder busway with aluminum bars.



Ohio Stamping Plant, Chrysler Corporation, Twinsburg, Ohio Architects and Engineers—F. A. Fairbrother & George H. Miehls Architects and Engineering Consultants—Albert Kahn Associates Construction—Hunkin-Conkey Construction Compony Mechanical Work—Robert Carter Company Electrical Contractors—Haffeld Electric Burways—General Electric Company

#### Largest Plant of Its Type in U.S.A.

This modern new plant incorporates 28 major lines of presses and subsequent welders that produce almost 300 different stampings and assemblies for all Chrysler Corporation cars. The entire plant area is covered with networks of different types of busways. Light-duty, 50-ampere plug-in busways serve the fluorescent lighting load.

Plug-in busways in ratings of 400 and 600 amperes, braced for a 50,000 ampere short-circuit current, serve the motor loads and general factory requirements.

New 1,600-ampere (type LVDP) low voltage drop plug-in busways supply the heavy welding loads, as well as the heavy press loads. Power is distributed at 480v. The plant load comprises 50,000 hp connected motor load and almost 30,000 KVA of welder loads.

#### **Aluminum Busway Systems Save Money**

In addition to the lower initial cost of aluminum busway, the use of

lightweight aluminum bus bars makes each section of busway easier to handle and easier to install. More and more users of packaged electrical distribution systems are finding that Alcoa® Aluminum Bus Conductor offers advantages of lower cost, availability and design flexibility. Aluminum distribution bus weighs considerably less than a copper system of equal conductivity. Pound for pound, it has greater current-carrying capacity than cable in conduit and costs less.

#### Alcoa Aluminum Can Serve You, Too

Wherever your production requirements demand an efficient, flexible electrical distribution system, it will pay you to specify busways with Alcoa Aluminum Conductors. Write us for the names of manufacturers who specialize in this

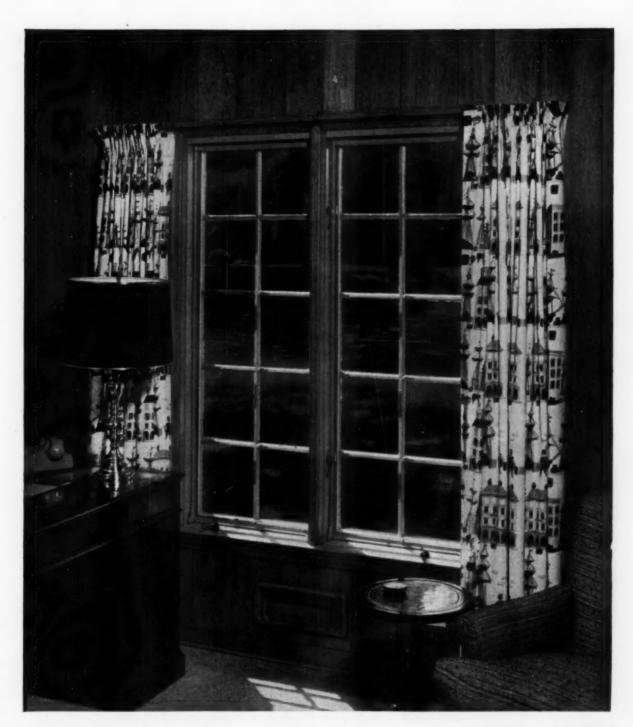
lighter, better, more economical product. Aluminum Company of America, 2297-K Alcoa Building, Pittsburgh 19, Pennsylvania.



Your Guide to the Best in Aluminum Value







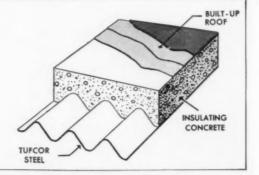


FOCAL POINT: PELLA WOOD CASEMENT WINDOWS, this time with horizontal and vertical muntins. Wood windows, wood paneling...a naturally beautiful combination. Besides, these are the windows with built-in ROLSCREENS, that roll up and down like window shades. And, for year-round weather protection, PELLA CASEMENTS can be furnished with PELLA's own dual glazing "storm window" panels.

#### WOOD CASEMENT WINDOWS

	STATE
ADDRESS	
FIRM NAME	
Please send helpful 20-page book, "Library of Window Ideas."	
ROLSCREEN COMPANY, Dept. I-117 Polla, lowa	

#### TUFCOR® offers permanent firesafe roof construction at low cost





EASY TO PLACE. Galvanized corrugated Tufcor sheets arrive at the job site conveniently bundled and pre-cut to fit structural framing. No measuring or cutting is required. Three men can easily place and weld 5000

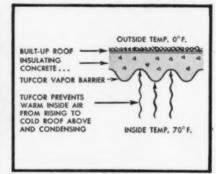
to 7500 sq. ft. of Tufcor in a single day. Low dead load of the finished Tufcor roof system (4 to 6 psf less than most types of roof construction) offers pronounced savings in the structural steel requirements.



EFFECTIVE INSULATION. Because insu-BUILT-UP ROOF. Rigidity and firmness of lating concrete is inert, it is one of the most the Tufcor system provide a firm base for permanent, desirable types of roof insulation. built-up roof, add years to the life of this Thickness of concrete fill placed on Tufcor roof, lower maintenance cost. Fast construccan be varied to obtain desired insulation. tion means faster profits from occupancy.



STRUCTURAL DECK. After tough-temper Tufcor sheets-80,000 psi and stronger-are welded in place, they help stiffen framing, provide an immediate work platform for trades. Tufcor easily withstands normal construction abuse.



VAPOR BARRIER. Water vapor can't penetrate Tufcor. Sheets stay dry, maintain insulating properties, cut fuel bills. Firesafe Tufcor roofs need fewer sprinklers. Insurance savings, alone, often pay for the entire roof deck in 10 years!

FOR MORE INFORMATION, contact Granco home or district office, ATTN: Dept. R-713.



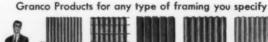
in Sweet's Architectural and Industrial Construction Files

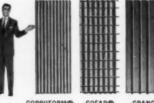
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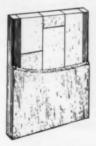
#### WOOD folding doors reflect bank dignity

Architects Sargent, Webster, Crenshaw & Folley wanted to give the First National Bank lobby at Niskayuna, New York, an open, free-flowing feeling, yet provide for private conferences when needed. They also wanted to reflect the dignity of this institution in their design. They chose PELLA WOOD FOLDING DOORS for their natural beauty and superior engineering detail. PELLA DOORS blend beautifully with all materials and lend dignity to any structure... be it a school, church, commercial building, or home.



They are available in four natural wood veneers—Philippine mahogany, oak, birch and pine. Can be ordered with clear finish or unfinished. Unfinished doors are sanded and ready for paint or varnish.

#### **WOOD FOLDING DOORS**



#### Pella doors

with exclusive
"Lamicor"
construction
maintain panel
straightness
and vertical
alignment
indefinitely.

#### SEND TODAY FOR IDEAS

ROLLSCREEN COMP. Dept. I-118, Pella, la				
I would like more detailed information on PELLA WOOD FOLDING DOORS and their uses.				
NAME	TEL. No.			
FIRM NAME				
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FOR THE BUILDER: Twin lights in Single Frame speed construction.

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#### the awning window with the "double-hung" look

Composed of a fixed window at the top and a ventilating unit of equal size at the bottom, PELLA TWINLITE is available in seven modular sizes, including 32" x 44" frame widths. In addition a picture window in combination with a ventilating unit is also available.

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**Ends Wet Basements Forever!** 

Now stop the age-old problem of keeping basements dry! Ger-Pak polyethylene film — the perfect moisture-vapor barrier material — permits no moisture transmission and will last the life of the building!

Lightweight, easy to handle and inexpensive, Ger-Pak is used by builders across the country who want unmatched moisture-vapor protection in basements, walls and concrete form liners . . . as well as superior dust sealing between floors. What's more, Ger-Pak is extremely versatile: protects material and equipment from the weather . . . covers unfinished doors and windows . . . enclosure in bad weather . . . terrific as a painting drop cloth . . . plus dozens of other on-the-job uses.

And only Ger-Pak offers the widest range of widths — from 10-inch for flashing all the way up to 40-foot. Available in clear or black. Ask your dealer about Ger-Pak today.

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GERING

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GERING PRODUCTS INC., Kenilworth, New Jersey

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To Meet FHA Requirements

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#### CORBIN heavy duty cylindrical locksets



Precision operation makes this Corbin lockset line the finest of its kind. Compact,

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P&F CORBIN Division The American Hardware Corporation New Britain, Connecticut







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All designs available in brass, bronze, and aluminum; except Windsor design, brass metal only. (Spartan also available in Stainless Steel.)

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The building that "has everything" has heating and air-conditioning systems of

NATIONAL PIPE

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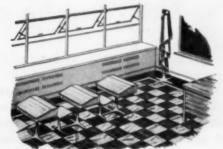


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West Point and Annapolis have been serviced by Ric-wil piping systems as far back as 1931. Since 1946 alone over 15,000 feet of Ric-wil prefabricated piping has been purchased for the nation's top military colleges. Installation of Ric-wil piping at the new 17,500 acre United States Air Force Academy has already been installed. Ric-wil is indeed proud of the part they have played in serving these military academies for a period of over twenty-five years.

Standard Unit

Standard Unit

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Quality Piping Systems . . .
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by GENERAL BRONZE CORPORATION

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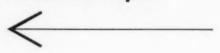


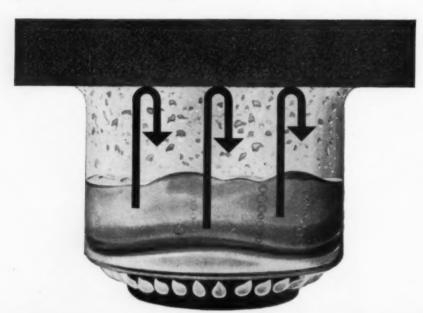






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is vapor-proof...

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—and inorganic FOAMGLAS is dimensionally stable ... waterproof ... easily carries loads of 7 tons per sq. ft. ... can't burn ... repels all vermin ... easy, economical to handle and install. Write for detailed literature.



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More and more architects are running their own prints on Ozalid's new Streamliner 200. They've found this compact new table-model whiteprinter saves them valuable time, helps them operate far more efficiently, and actually saves them a great deal of money.

With the Streamliner 200 you get clean, sharp prints in *seconds*. No more do you go printless in overtime and weekend rush periods. No more

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So get all the facts. Call your local Ozalid representative. Or write: Ozalid, Dept. CC-10, Johnson City, N. Y.



Your professional eye will approve of the full 42-inch Streamliner 200's appearance and compact size—stands just 22" high, 27" deep—takes little office space. (Stand shown above is optional at extra cost.)

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A Division of General Aniline & Film Corporation In Canada: Hughes Owens Company, Ltd., Montreal you can

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Outside weather conditions, or inside requirements may make it necessary to heat some sections of a building at the same time that other sections require cooling. Where these conditions exist, the McQuay "MC" MULTI-ZONE air conditioning unit will furnish balanced comfort simultaneously to different determined areas with either filtered, cooled and dehumidified air, or filtered, heated and humidified air . . . or a mixture of these in any desired proportions . . . at your command.

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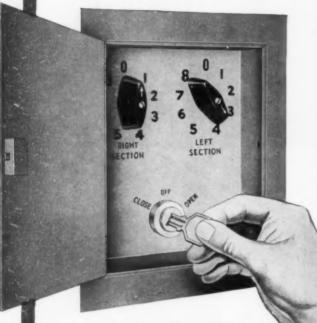
**HEATING • REFRIGERATION** 



# MEDART AUTOMATIC

eliminate all effort necessary for

# EXCLUSIVE KEY-OPERATED CONTROL OPENS AND CLOSES GYM SEAT SECTIONS QUICKLY, QUIETLY



Simply set the control dial to whatever section is to be opened or closed and turn the key in proper direc-

tion—that's all! No matter how big each section—no matter how many rows—whether on main floor or balcony—seats move smoothly and noiselessly into position in only a few seconds without binding. If all the seats in any section are not required for use, releasing the key stops movement instantly when the wanted number of rows are in position.

Automatic safety controls insure completely hazard-free operation. Removable keys prevent operation by all unauthorized persons.

Medart Key-Operated Control may be installed any place in the gym for greatest convenience and utility.



## Power operation completely sections. Key-operated remote

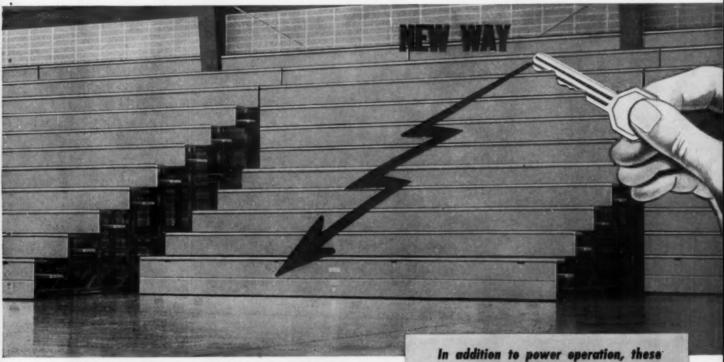
- No floor tracks or building changes are necessary. The installation of power operation requires no other conditions than are needed for manually-operated seats.
- No complicated wiring is needed. Any ordinary 110-volt or 220-volt power source will do.
- Seats roll open or closed without binding or "crabbing." Straight-line trackage is an outstanding feature of Medart power-operated seats.

#### MEDART POWER OPERATION CAN BE INSTALLED ON MEDART SEATS ALREADY IN SERVICE

No extensive changes necessary in gym seat construction. Cost is surprisingly low. Modernize your gym seats with power operation. Ask for complete details.

# IWFR-NPERATED GYM SEA

manual opening and closing. Cost is low.



# self-contained within gym seat control may be installed anywhere

- · Seats automatically lock in any position during opening or closing by release of control key. Whether 1, a few, or all the rows are required, seats remain safely stationary until power control is key-actuated.
- Smooth key-controlled power operation eliminates all crashing and banging of manually-operated seat sections by overly enthusiastic muscle men. Life of seats is prolonged-maintenance and upkeep are reduced to a minimum.

Write For Information

### FRED MEDART PRODUCTS, INC.

3540 DeKalb Street

St. Louis 18, Missouri





other exclusive features have made Medart Telescopic Gym Seats famous for safety, durability, easy operation

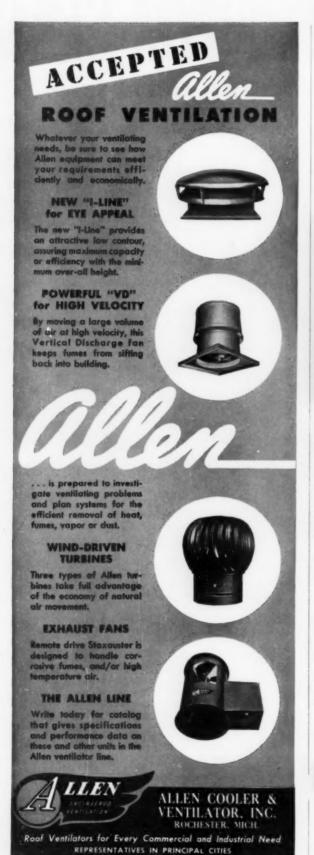
"Floating Motion" Operation. Interlocked telescoping arms and supporting members float in and out with amazing ease, prevent binding, assure true alignment. Medart Seats have always been easiest of all to operate manually—a feature that assures possible perfect, trouble-free power operation.

Straight Line Trackage is guaranteed with Medart's "Dual Align" interlocked roller housings. Non-marring rollers retract un-der load; place vertical uprights directly on floor where the weight belongs; not on inadequate diagonal bracings or insufficient wall reinforcements.

Safer Weight Distribution, maximum resistance to side sway, greater strength and ultimate compactness is achieved by stag-gering the 8 vertical uprights under each row. Entire steel understructure is freestanding, self-supporting. Seat and foot boards, and risers add extra strength.

Spacious Seating Comfort and plenty of leg freedom results from ample toe and heel room, below seats and risers, in addition to 22" or 24" row spacing. Row rise of 10\%" or 11\%", with seat heights of 17" or 18", provides unobstructed visibility anywhere in gym.

Medart Seats for outnumber all other in schools, colleges and other gymnasium structures from coast to coast.





## Quickly erected, factory-built refractory Van-Packer Stack gives economy, permanence, efficiency

The Van-Packer Stack is quickly and simply erected. Its cylindrical 3-foot long sections are cemented one on top of another with acidproof, high-temperature cement and secured with aluminum drawbands. Sections are centrifugally-cast of refractory material, encased with an aluminum jacket.

On the average, initial costs of the Van-Packer Stack are 2/3rds less than brick, ½ less than tile-lined concrete block, about the same as steel. Upkeep costs on the Van-Packer Stack are eliminated by its aluminum jacket.

Non-corroding refractory sections provide masonry permanence, last 3 times longer than steel (average). Because the insulated sections prevent excessive heat loss thru stack walls, the Van-Packer provides more draft than a comparable steel stack, about the same draft as a comparable brick stack.

Van-Packer offers two types of sections — STANDARD for furnaces and boilers, HI-TEMP for incinerators. Stack sections come in 7 diameters from 10" I.D. to 30" I.D. to meet your requirements.

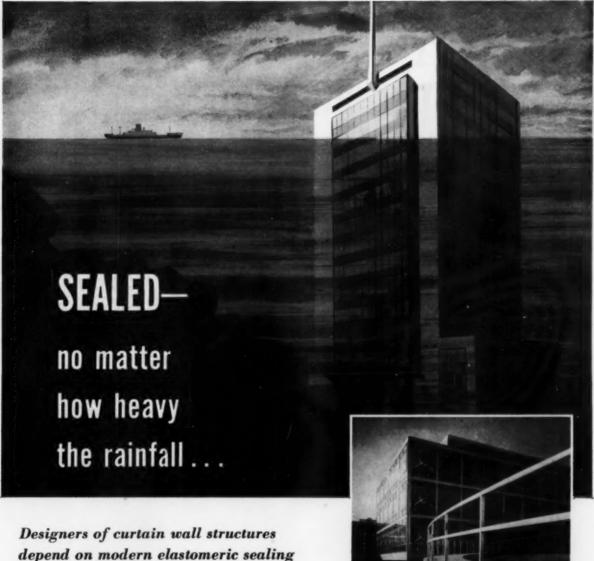
Available nationwide thru Van-Packer heating and building material jobbers and manufacturers representatives. See "Chimneys—Prefabricated" in Yellow pages, or write Van-Packer.



Send for 80-page data file with guying, installation method, test reports

# Van-Packer PREFARETORY Stack

Van-Packer Company \* Division of The Flintkote Company P. O. Box No. 306 \* Bettendorf, Iowa \* Phone: 5-2621



Designers of curtain wall structures depend on modern elastomeric sealing compounds based on THIOKOL liquid polymers to prevent leakage.

Sealants containing THIOKOL liquid polymers resist deterioration under extreme water and weathering conditions. They cling tenaciously to a wide variety of materials—wood, steel, stone, glass and plastics—and remain almost impervious to the effects of sunlight, vibration, ozone, oxygen and smog.

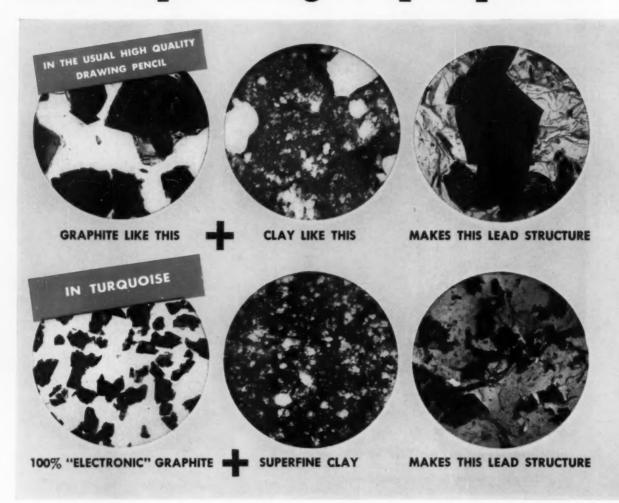
For more information, see Sweet's 1957 Catalog or write: Thiokol Chemical Corp., 780 North Clinton Ave., Trenton 7, N. J. In Canada: Naugatuck Chemicals Division, Dominion Rubber Co., Elmira, Ontario.

3M's dramatic new WEATHERBAN brand curtain wall sealer based on THIOKOL liquid polymers was used for the Connecticut General Life Insurance Company building after exhaustive "hurricane tests" proved its resistance to water and stress. A simulated 12-inch-per-hour rainfall driven by 125 mph gales beat against huge 8' x 11' glass panes sealed with WEATHERBAN sealer. The seal adhered perfectly without leakage and absorbed the strain and shock waves caused in the heavy glass by the buffeting winds.



 Registered Trademark of the Thiokol Chemical Corp. for its liquid polymers, rocket propellants, plasticizers and other chemical products.

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## YOU ALWAYS GET PROVEN QUALITY FROM TURQUOISE DRAWING LEADS AND PENCILS

- PROVEN GRADING -17 different formulae make sure you get exactly the line you expect—
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# Eagle Turquoise reproduction





... AND MARKS LIKE THIS

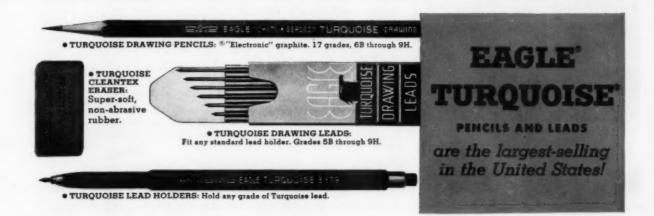
Relatively large, irregular particles of graphite make a rough-edged line with gaps that permit the passage of light. Prints will be inferior.



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WRITE FOR FREE SAMPLE DEMONSTRATION KIT (including Turquoise wood pencil, Turquoise lead, and Turquoise "skeleton" lead) naming this magazine. Eagle Pencil Company, 703 East 13th Street, New York, N.Y.



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Now in 126 Detroit area schools



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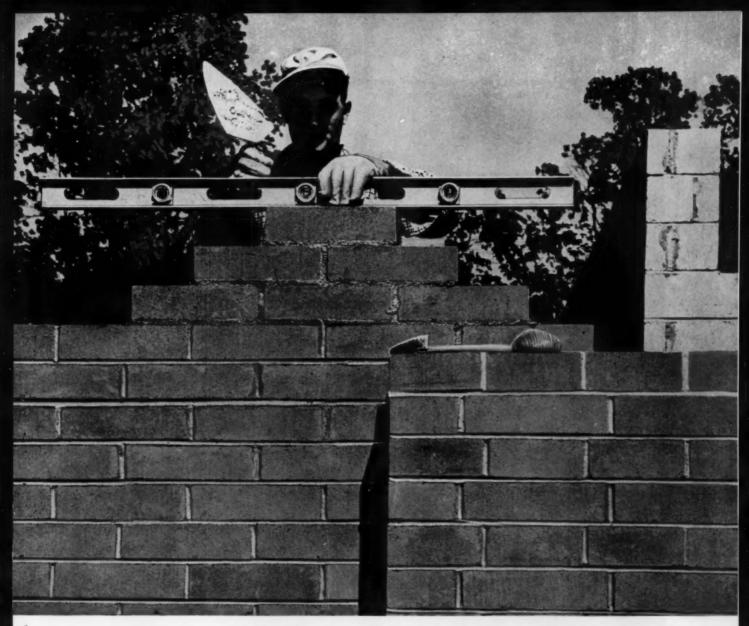
(24" high counters shown here)

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casework - sinks and counters - special purpose units

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TRUE, TIGHT JOINTS were obtained with Atlas Mortar cement in laying colored masonry units (8" x 12" x 3\(\frac{1}{2}\)") at McKinley Shopping Center, South Bend, Ind., according to masonry contractor Hugh M. Lee of Niles, Mich. General contractor, Paul Woodcox; Architect, Charles T. Donegan; both of South Bend.

# ATLAS® MORTAR cement stays plastic and workable...spreads easily with less effort

- Field results consistently confirm that Atlas Mortar cement produces excellent mortar workability and also gives high yields.
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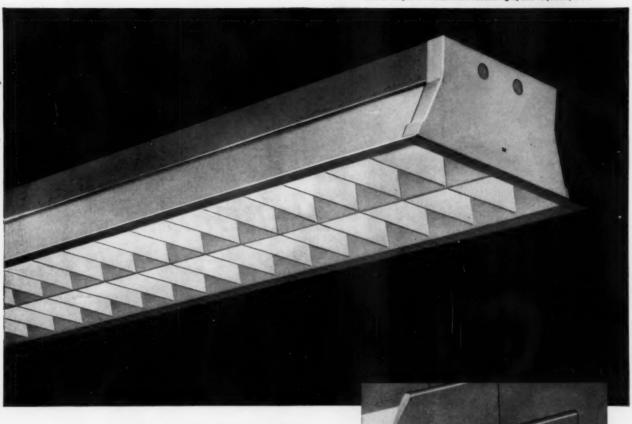
Curtis Troffer

with I BO\*



See the LBQ Troffer demonstrated in booth #145 at the NECA convention, in Cincinnati, November 12-15.

Curtis Eye Comfort Alzak Aluminum Troffer with LBQ Louver Fin. Snap-on yoke and toggle bolts for easy application to any ceiling: plaster, acoustical tile, or inverted T-grid. New shallow depth... maximum recessing space required, 6%\*.

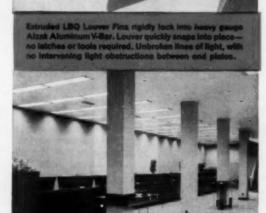


Exclusive with Curtis—LBQ\* Louver Fin with
\*Low-Brightness Quality—assures rigid, rugged strength

The end result desired in lighting is high level illumination with maximum visual comfort. Both are achieved with the new Eye Comfort®, Alzak† Aluminum Troffer, by Curtis. This new troffer features a completely unique and exclusive design in the extruded LBQ Louver Fin-an original Curtis development. The heaviest Alzak Aluminum Fin yet devised provides absolute rigidity and permanent strength-longest life, ever. V-bar and fin of the Curtis Troffer produce a parabolic pattern in both directions. With the LBQ Louver, only Curtis has a true parabolic-shaped fin. Result: High output... with low-brightness quality... from all critical viewing angles. There's proper diffusion, comfortable illumination, wherever light is cast. Reflected glare is minimized. Be one of the first to see how the new Curtis Eye Comfort Troffer, with extruded LBQ Louver Fin, can solve lighting problems better in offices, schools, stores, institutions-all commercial buildings. Write today for a demonstration by a Curtis Visioneer (vision engineer) in planned lighting.

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CURTIS LIGHTING, INC. 6135 W. 65th St., Chicago 38, Illinois In Canada: 196 Wicksteed Avenue, Toronto 17, Canada Visioneers in Planned Lighting®

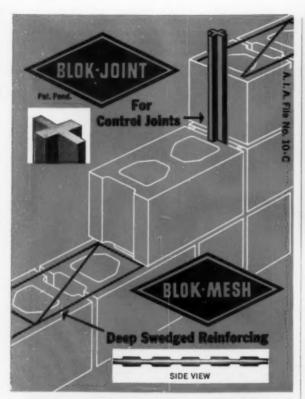


This is another example of Curils Planned Lighting . . . high level Humination plus complete visual comfeet. Installation: Third National Bank, Rockland, Wingle.

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# It Takes Both For MORE STRENGTH & PROTECTION IN MASONRY WALLS

Blok-Joint is a cross-shaped rubber extrusion used to make control joints in masonry walls. No special blocks are required — no building paper and mortar fill is necessary. No cutting or sawing to be done. Blok-Joint is used with any standard metal window sash block.

The secure interlock provided by Blok-Joint adda to the lateral stability of the wall. It allows for contraction and expansion while maintaining a firm joint.

Blok-Joint is effective in single block walls, with brick and block backup and at pilasters and columns.

The big advantage you get with Blok-Mesh is the exclusive "Deep-Grip" swedging. It allows the mortar to get a real bite on the reinforcing yet requires no more area in joint than other types of superficial deforming.

Blok-Mesh is designed to eliminate cracks above lintels and below sills. It minimizes ordinary shrinkage cracks. Notice in the illustration how the "Deep-Grip" swedging of Blok-Mesh is large, deep and well-defined to form effective dovetailing.

### Write for FREE Blok-Joint sample

and literature on Carter-Waters 2-point better masonry wall design.

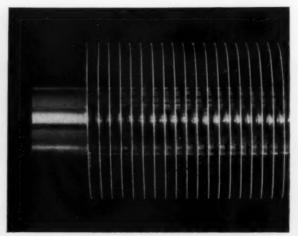
For Further Information See



2-C Car Architectural or Industrial Construction File



2440 Pennway, Dept. AR, Kansas City, Ma



# AEROFIN Smooth-Fin Coils offer you

Greater Heat Transfer per sq. ft. of face area

## Lower Airway Resistance

-less power per c.f.m.

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



Write for Bulletin S-55

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## Design for living . . . for sales BEGIN WITH A BEAUTIFUL BACKGROUND of plastic wall tile

Beginning with a handsome entry wall, you can extend salesmaking decorative features all through your homes with plastic

a sought-after feature in today's wonderfully livable homes. Many decoratorstyled colors and versatile tile shapes, plus light weight and easy, cost-saving installation . . . all give free rein to your decorative ideas in Styron plastic tile.

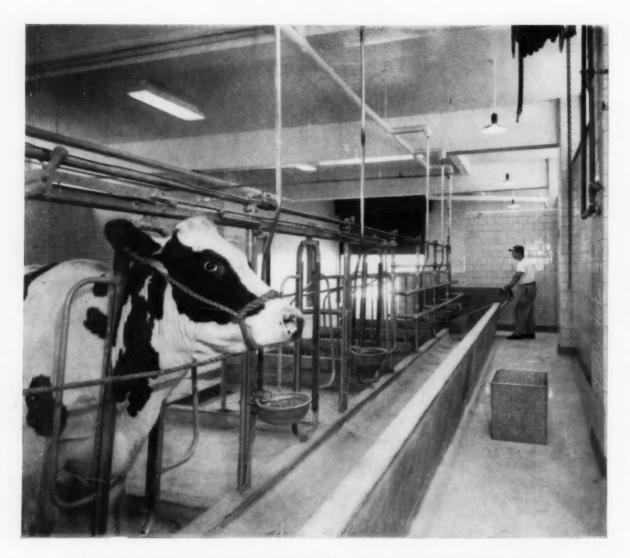
The interiors you design in Styron plastic tile will live up to your finest homes, for your certified dealer can guarantee the quality of tile, mastic and installation. Let him help you give your homes this permanent, easy-care beauty. The DOW CHEMICAL COMPANY, Midland, Mich., Plastics Sales Dept. PL1560G.

Interior designs by John and Earline Brice.



IDEA! A colorful bookshelf wall in easy-to-clean Styron plastic tile brightens a small den.





# Styrofoam helps maintain even temperatures in new barns at Cornell veterinary school



The New York State Veterinary College at Cornell University, Ithaca, New York, recently built ten new experimental barns. As cleanliness and temperature consistency were prime considerations, the construction materials selected were concrete block, structural tile and Styrofoam\*, a Dow expanded polystyrene.

Styrofoam is the insulation of choice in many applications by many different companies—and for many good reasons. It has a constant low thermal conduc-

tivity and is resistant to the passage of water vapor. It has high structural strength, will not rot, mold or deteriorate. Styrofoam is lightweight and easy to handle. It can be cut with ordinary tools such as a saw or jackknife.

These facts add up to a low in-place cost and lifetime insulating efficiency. For more information, contact the nearest Styrofoam distributor, or write to the dow Chemical Company, Midland, Mich., Plastics Sales Dept. 1731M.

\*Styrafogm is a registered trademark of The Dow Chemical Company.

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THE MARK OF QUALITY

BARBER COLMAN

# Newest Barcol OVERdoor weathers, insulates, and closes like an outside wall



# Weather-King Flush Door weathers like a wall

New Weather-King Flush Barcol OVERdoor Sections introduce hardboard sandwich construction to overhead doors for industrial, commercial, and residential use. Famous Weather-King hardboard facing has established its excellent weathering characteristics through thousands of Barcol-guaranteed panel door installations all over the country. Now applied over a resin-impregnated honeycomb core, this same facing gives a flush section that weathers as well as the outside wall in which it is installed! Weather-King facing is guaranteed not to split, crack, delaminate, or chip because of weather; core and bonding adhesive are impervious to moisture; Douglas fir closures insure against moisture damage and decay.

## Honeycomb sandwich insulates like a wall

The exclusive sandwich construction of Weather-King Flush Sections breaks the inner space into hundreds of small captive air cells, eliminates convection currents, and provides insulating effect equal to that of a 5-in. house wall — U factor .259! Weather-King Flush is the first overhead door that can be installed extensively in a building's outside walls without materially affecting indoor temperature control.

# Barcol Cam Action closes tight as a wall

With exclusive Barcol Cam Action closing, door operates free of stops until it is within 4 inches of floor, then the entire door moves rapidly against stops for a firm weathertight closure. Opening and closing are friction-free—yet air does not leak in to disrupt temperature control.

### Design them like walls!

Weather-King Flush Doors give the architect a new lease on design appearance by making flush door simplicity and flexibility fully practical wherever overhead doors are to be specified. Barcol OVERdoors and Operators are installed and guaranteed by Barcol distributors, coast to coast. For free design service, call your distributor (under "Doors" in phone book) or write.



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- Brochure on Weather-King Flush Barcol OVERdoors
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# COMFORT CHART AVERAGE AIR VELOCITY - FPM

### COMFORT STANDARDS

Barber-Colman engineers have developed a Comfort Chart illustrating the proper relationship between air velocities and air temperatures necessary for human comfort. This chart, shown at the left, serves as a criterion for rating the performance of Barber-Colman automatic control and air distribution products. It indicates conditions of air movement and temperature in the occupancy zone. The line shown for each average room temperature is the limit of satisfactory comfort conditions. All points below the line represent uncomfortable conditions while those above the line fulfill Human Comfort Standards. As the one source for both temperature control and air distribution products, the Barber-Colman man can assure the proper relationship of temperatures and velocities as dictated by this chart.

COMBINED PRODUCTS, COMBINED SKILLS . . . COME TO ONE SOURCE . .

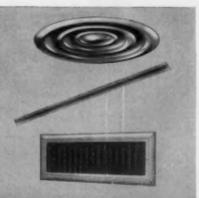
# ... for your Automatic Controls and Air Distribution Products

Yes, Barber-Colman is prepared to give you a combination of both temperature control and air distribution, selected and adjusted for ideal comfort! A complete line of superior-quality equipment, coupled with a nationwide field organization experienced in the selection and application of Automatic Control and Air Distribution equipment, is quickly and easily available. The Barber-Colman Sales Engineer assumes the responsibility for selection and placement of equipment and is available for supervision of installation and final balancing of the combination system. More and more of these system combinations are being furnished by Barber-Colman as the solution to problems resulting from an ever-changing architectural concept and the demand for higher comfort standards. Phone your nearby Barber-Colman field office for a discussion of how you can benefit from this highly logical trend.

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# BARBER-COLMAN COMPANY

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# Querline stainless entrances

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Write us today for Overline Entrances Catalog No. 1057. Learn about the superlative finish, superior design and workmanship, 10-year warranty against failure, and why the first cost is the owner's last cost with Overline 100% stainless steel entrances.

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Greensburg, Pennsylvania • Los Angeles 39, California

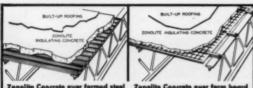


Ultramodern, five-story general office building at the Homestead District Works of United States Steel Corporation near Pittsburgh, Pa. Photo shows stainless curtain wall and, in front of it, the stainless steel entrance crafted by Overly. This consists of a number of Overline all-stainless-steel doors, frames and other members forming the four sides of the entrance vestibule. Architects: Hoffman & Crumpton, Pittsburgh. General Contractor: Crump Inc., Pittsburgh.

# they all shopped for Firesafe, Lightweight, Low Cost Construction



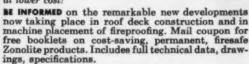
# they all bought **ZONOLI**



Zonolite insulating concrete meets any combination of requirements for roof design. Poured monolithically over formed steel. form boards, metal lath, paper-backed wire lath.

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Now-machine-placement of Zonolite is enabling architects and builders to build greater performance into structures faster and at lower cost!





### **Vermiculite Concrete Roof Decks or Plaster Fireproofing**

\*Shopping Centers "shop," too. That's why leading architects and engineers specify Zonolite "poured-in-place" concrete roof decks-and Zonolite fireproofing for floors, ceilings, beams or trusses.

Zonolite roof systems, adaptable to any design, speed construction-cut labor costs. But, above all, they provide important superior qualities...added benefits that mean so much to your clients. Zonolite is one-hundredpercent non-combustible; it cannot burn-it reduces insurance premiums as much as half! It insulates! It cuts thousands of tons of dead weight. And, it's permanent!

Zonolite fireproofing means the "best possible fire protection,"-earns highest fire ratings. It saves on steel -permits the use of lighter structural members, hence providing initial economies in addition to "over-the-longrun" savings.

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On James Sales Elementary School, Tacoma, Washington

# Fir plywood roof deck helps save \$3,300°°



To eliminate 2 x 4 blocking, metal "H" clips were used at unsupported panel edges. Two clips were used for each span. (Clips were responsible for approx. \$20 per M of savings; see table above).



JAMES SALES ELEMENTARY SCHOOL; Tacoma, Washington ARCHITECTS: Lea, Pearson and Richards CONTRACTOR: Nelson Construction Company STRUCTURAL ENGINEERS: Smith and Murray

## 5 ways Fir Plywood builds better schools

AN EXCELLENT EXAMPLE of how fir plywood roof decking sharply cuts costs as well as provides markedly superior construction is this new U-shaped, 1-story reinforced concrete school.

The contractor stimates ¾" fir plywood saved a total of \$3,300.00 in the job; \$2,800.00 in actual installed cost, plus in additional \$500.00 by amortizing costs of some of the panels previously used for forms. A total of 22,000 sq. ft. were used on the job. Design calculations by the architects show plywood superior in resisting racking forces such as wind loads and earthquakes.

Although many home builders have found thick plywood over wide rafter spacing saves money, this is one of the first detailed cost analyses for a larger building. The idea points the way to new opportunities for reducing costs on commercial and industrial buildings as well as schools.



means quality construction

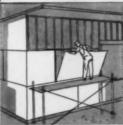


#### "SCHOOLS OF THE FUTURE"

... a new portfolio collection of design ideas embodying the thinking of six of the nation's leading architects. A stimulating and imaginative approach to what tomarrow's schools can and should be. Separate folio devoted to each architect's work. Fully illustrated and detailed in brilliant color.

Also included: "Fir Plywood in Schools for Quality Construction at Lower Cost," a new 8-page design and specification guide.

FOR YOUR FREE COPY of this new portfolio write Douglas Fir Plywood Association, Dept. 111, Tacoma 2, Washington (Offer good USA only)



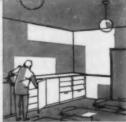
 Strong, rigid, easy-toapply wall and roof sheathing.



Smart, durable siding, soffits and exterior trim.



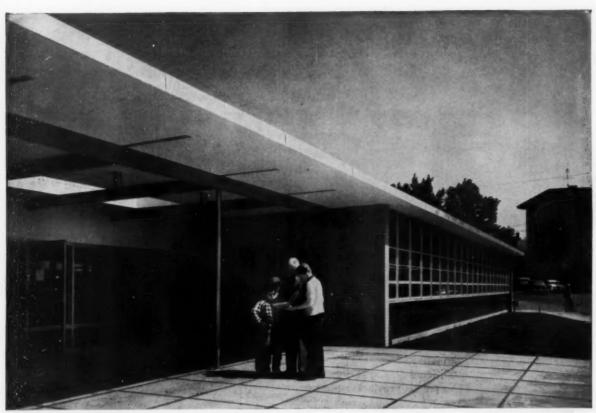
 Attractive, damageresistant paneling and wainscoting.



 Good-looking wardrobes and storage lockers.



 Inexpensive, easy-tobuild screens, movable partitions.



Albany Boys' Club was designed by office of Henry L. Blatner, architect, of Albany. General contractor was McKenna Construction Co., also of Albany.

# BOYS' CLUB IN DOWNTOWN ALBANY BUILT ECONOMICALLY WITH STEEL JOISTS

Because the two buildings used by the Boys' Club of Albany, N. Y., were more than fifty years old, it was decided to replace them with two new ones, both to be located in the congested city areas which they serve. The first of these new buildings has now been completed: a highly functional, but economically constructed, one-story clubhouse designed to fit the available site.

The new building contains a large gymnasium, crafts and hobby rooms, shower and locker facilities and a library. Of steel-frame and face-brick construction, it was built at minimum construction cost.

One factor in the low construction cost was the use of Bethlehem Open-Web Steel Joists. The joists arrived at the job site fully fabricated, ready for instant placing without interrupting construction schedules. Installation of piping and wiring was simplified because conduits and ducts could be run in any direction, through the open webs. Steel joists contribute to the rigid, permanent construction of the building, a factor which will hold future maintenance to a minimum. Used in combination with poured ceiling and concrete floor slabs, the steel joists also contributed to fire-safety.



Bethlehem Longspan Joists span the gymnasium, giving uninterrupted, column-free space below.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

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## BETHLEHEM OPEN-WEB STEEL JOISTS





# you know you're right when you specify by DFPA grade-trademarks

### factory-inspected, laboratory-tested

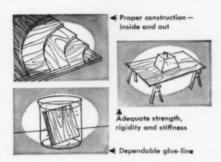
To qualify for DFPA grade-trademarks, manufacturers must pass rigid and continuous inspection of current plywood production. In addition to these on-the-spot mill checks by DFPA quality supervisors, the asands of samples undergo scientific wing in DFPA laboratories. Use of graderademarks may be withdrawn if quality is not satisfactory.

### right grade, right quality for every job

DFPA grade-trademarks are specification guides to the right grade for a specific job. Only genuine DFPA quality-tested panels bear DFPA registered grade-trademarks. There are imitations. Don't be misled!

### Be sure you can tell the difference.

Send for the DFPA Quality Story—a portfolio of grade-use data and a step-by-step description of the DFPA quality control program. Write Douglas Fir Pływood As-sociation, Tacoma 2, Washington. (Offer good USA only)





\*DFPA stands for Douglas Fir Plywood Association, Tacor Washington—a non-profit industry organization devoted to product research, promotion and quality maintenance.



FPA grade-trademarks Fir Plywood



Here is an outstanding modern design and an excellent use of Spandrelite in combination with Solex heat-absorbing, glare-reducing plate glass. It's the First National Bank Building in Colorado Springs, Colorado . . . Edwin A. Francis-Carlisle B. Guy, Associate Architects, Colorado Springs, Colorado.

# Clad in color that will never fade with weather-resistant Spandrelite

These two modern buildings are excellent examples of how Pittsburgh Spandrelite can be used to advantage for the spandrel areas in curtain wall construction.

No other material can duplicate SPANDRELITE for this kind of service. Since it is a true glass, it has the ageless qualities of glass—non-porous and non-absorbent, with complete resistance to weathering and corrosion. In these latter qualities, it is unquestionably superior to any other currently available curtain wall material.

Spandrelite is produced in 16 standard colors, or we can custom-match just about any color you specify. The color, incidentally, is a ceramic which is fused to the back of the heat-strengthened glass. The color will not fade, and it can be duplicated easily. Spandrelite has far greater impact resistance than standard plate glass.

Standard surfaces are available in either polished or twill. Spandrelite is sold through branches and distributors of the Pittsburgh Plate Glass Company.



PAINTS . GLASS . CHEMICALS . BRUSHES . PLASTICS . FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY



This is the Hospital Service Plan Building in Newark, N. 1. The curtain wall uses Spandrelite in combination with Twindow® insulating windows and Solex® glare-reducing, heat-absorbing plate glass. Architect: Frank Grad & Sons, Newark; Eggers & Higgins, New York City, Associated Architects.

Write today for our <u>free</u> full-color book



Pittsburgh Plate Glass Company Room 7370, 632 Fort Duquesne Blvd. Pittsburgh 22, Pa.

Without obligation, please send me a copy of your full-color book entitled "Pittsburgh Glass-Clad Buildings."

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● Von Duprin quality is the best assurance of "the <u>safe</u> way out"! For Von Duprin fire and panic exit devices are virtually timeless in their ability to protect lives against that "once-in-a-lifetime emergency" or defy the rough wear of daily traffic. Superior Von Duprin design, close inspections, the use of only quality materials, insure unfailing dependability. Result: Von Duprin devices are trusted by architects, hardware consultants and safety-minded officials . . . used in outstanding buildings of all types.

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# SCHOOLS AND ARCHITECTS COSTS AND VALUES

ARCHITECTURAL RECORD OCTOBER 1957 BUILDING TYPES STUDY 251

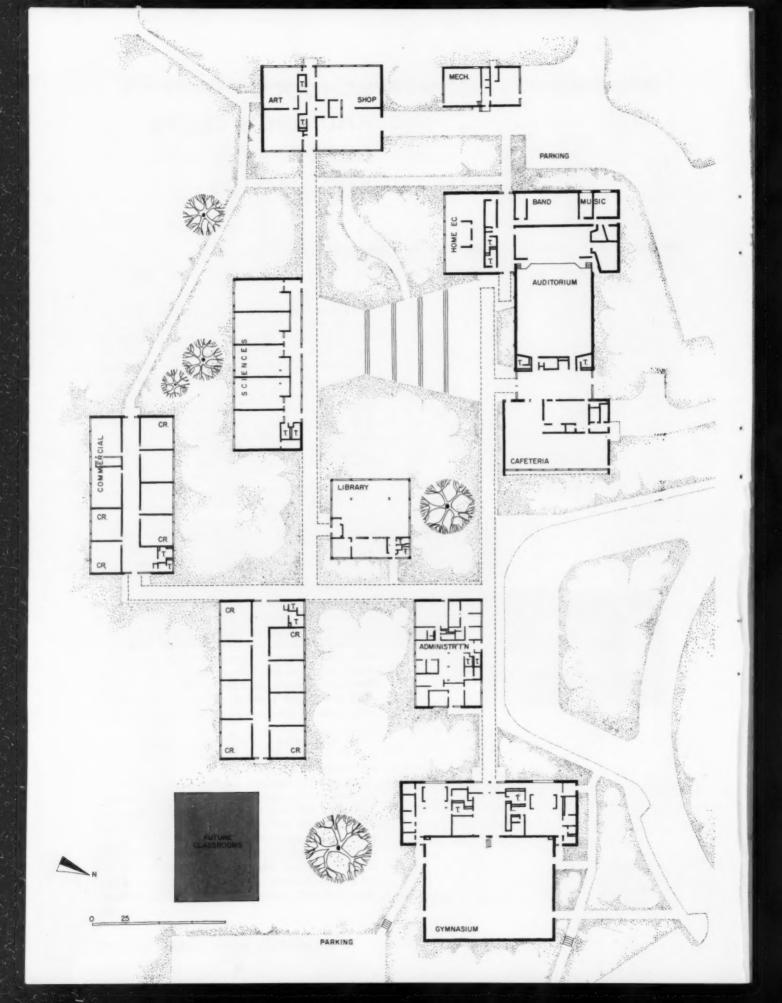
It has been a hard summer for architects. You could scarcely come away from a newsstand without a handful of unkind allegations about the profession. As early as May, an author in *Harper's* accused architects of willfully thwarting America's return to Classic building forms. June and July were humid and harrowing. August brought hot blasts at the new Air Force chapel and brought Dorothy Thompson in the *Ladies' Home Journal*. "Must Schools Be Palaces?" she asked. And not to be outdone, the *Reader's Digest* turned up in September with "Do School Pupils Need Costly Palaces?" Before frost there may be further palace bulletins.

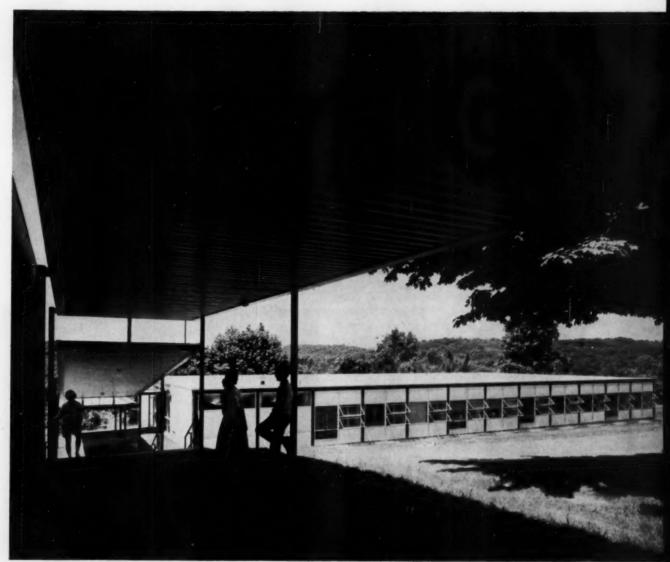
Miss Thompson's argument — or DT's complaint — set forth that "communities are being taxed to support properties that often are out of all proportion to the community's needs — or the income of its people." In support of this she cites a New England high school which she feels didn't need the gymnasium it got; whose "glamorous home-ec rooms" are questionable for girls from modest homes (cook-outs for the poor?); and which has, among other alleged luxuries, "expensive science laboratories." She is nostalgic about cost savings she has known in two-story buildings.

Who can quarrel with an appeal to the taxpayer to study his community's school needs? On the evidence we are given here, who will say that the voters in these New England places acted wisely? DT says their financially burdensome buildings are "their own fault because most of them never showed up at the meetings. . . ."

But she takes them off the hook immediately. "There are, of course, people who want such schools—architects and contractors first of all." And there the true nature of DT's complaint suggests itself: an unreasoning compulsion to transfer responsibility. This is highly contagious and, in the *Ladies' Home Journal*, potentially epidemic. For what will come through on those pages for too many of the women of America is the notion that inappropriate and wasteful buildings are the invention and the ambition of architects. It will not be enough simply to say it isn't so; to assert that the suggestion completely inverts the truth; not in the

(Continued on page 204)





All photos by Joseph Molitor

### MATURE MODEL OF THE CAMPUS PLAN CONCEPT

John Jay High School, Cross River, N. Y., Ketchum, Giná & Sharp, Architects

Campus-plan public schools have not developed overnight, and yet the few very sure, matured examples we have serve to remind that they are really a very recent phenomenon. To this group the John Jay School must be added.

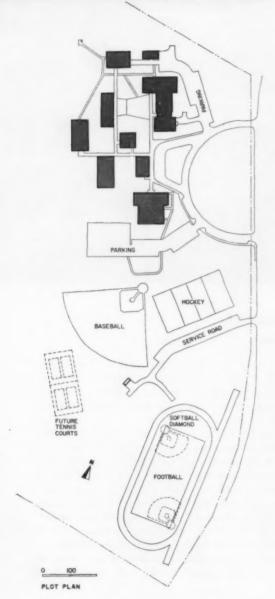
Every building in this plan is better for a somewhat richer program than many schools enjoy, and the care with which the whole has been developed suggests that the architects used their funds well but also that a leaner budget would not have limited the basic planning, the good scale, and the fine sense of fitness in the well-handled landscape of the site. From the studied choice of the site to the detailing of the boiler house it is apparent that this is one of our best new schools.

The campus plan is here to stay in one form or another, and this school should make that a fact.

Above: steel decked walkways connect classroom buildings. Left: outdoor assembly area fits slope between auditorium and science building



Typical classroom faces north or south



Science rooms occupy one building unit





176 ARCHITECTURAL RECORD OCTOBER 1957

#### JOHN JAY HIGH SCHOOL

On 110 acres of tree-covered slopes this school for 800 pupils will eventually be expanded to accommodate 1000 with the addition only of classrooms. Auditorium, gymnasium, cafeteria, and all other common spaces and services have been built in the initial phase and are now in use.

Automobile approach to the campus arrives at the administration unit. The gymnasium flanks this at the east, and the cafeteria and auditorium at the west. The eight buildings which presently constitute the school are set at various levels down the slope with the library central to all.

Design study on this scheme started about four years ago (Architectural Record, July 1955), and evidence of its intensity and duration is everywhere. The siting of the buildings, their functional interrelationships, and the really fine detailing in the simple palette of materials are especially noteworthy.

Extraordinary care was taken in the planning and equipping of all spaces, and this very studied feeling must impress the most casually interested visitor.

Typical classrooms are light, clean, and precise. The cafeteria is an appetizing space with well-chosen furniture and fixtures, and the auditorium is unusually fine for a high-school — or any — building program.

Certainly the most recurring impression must be the disposition of the buildings on the site. The variety of vistas and the easy transitions from one level to another induce a special awareness of the qualities of the space and the buildings which organize it.

Throughout the campus the warm face brick repeats itself and extends the eye's reach. Broken here and there with simple areas of harmonizing color, the whole composition is a skillful exercise in color and texture as well as functional school planning and expert detailing.

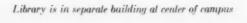
Structural frame is steel on poured concrete foundations. Exterior walls are face brick, backed up with concrete block and on the window walls insulated porcelain enamel wall panels. Interior wall surfaces are painted. Roof is built up on a steel deck. Interior partitions are concrete block with ceramic tile in the toilet rooms. Floor surfaces are asphalt tile, Vinyl asbestos tile, wood block, and quarry tile. Ceilings are either exposed or finished with acoustic tile. All sash are aluminum projected. Gray] glass is used above eye level in many rooms.

Entrance doors are aluminum, interior are flush plywood. Heating is by oil-fired boilers through perimeter ducts and radiant panels.

Kelchum, Giná & Sharp, Architects; Walter D. Cocking, Educational Consultant; Severud-Elstad-Krueger, Structural Engineers; Tectonic Associates, Mechanical Engineers; Joseph R. Gangemi, Associates, Landscape Architect and Site Planner; Bolt, Beranek & Newman, Acoustical Consultants



West through center of campus; cafeteria at right





Cafeteria faces east; has dark glass sun screens



Auditorium is typical of beautifully finished rooms





Toward library with gymnasium at right, classroom unit at left

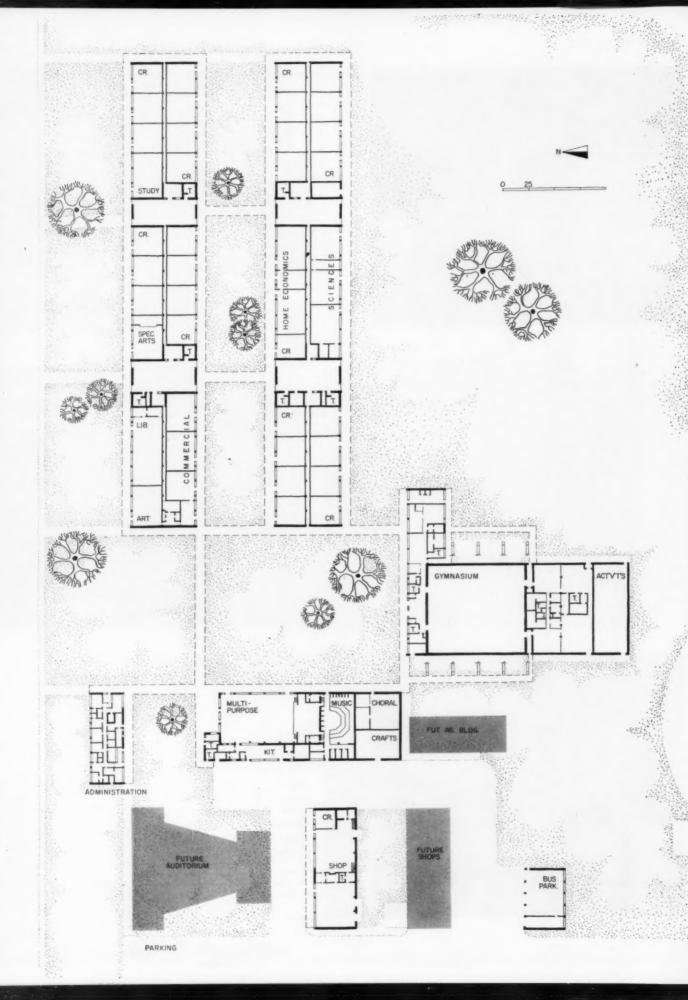


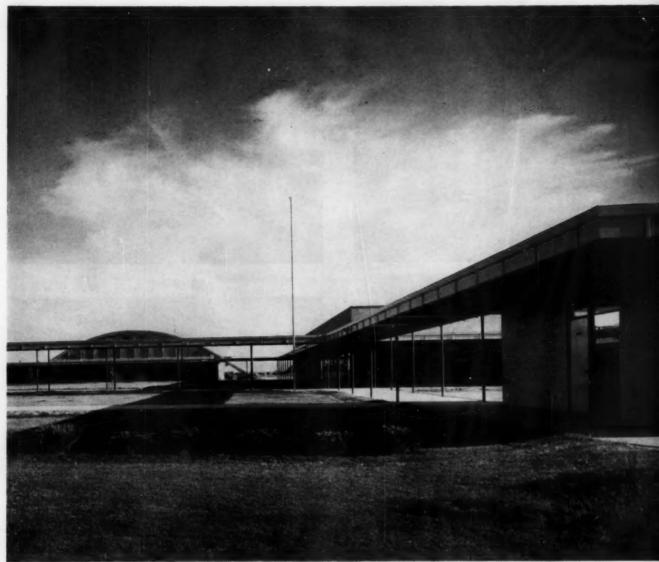
Boiler house is located at west end of campus



### JOHN JAY HIGH SCHOOL

754 568	rer rupu	rer sq r
*		
4,505		
18,556		
1,192,301	1,490	15.36
23,307		
19,291		
6,922		
17,764		
.75,655		
2,043		
) 144,982		
1,337,283	1,671	17.23
*		
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136,008		
1,473,291	1,841	18.98
25,000		
1,498,291	1,872	19.31
84,300		
1,582,591	1,978	20.39
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120,422		
	18,556  1,192,301  23,307 19,291 6,922 17,764 75,655 2,043  ) 144,982  1,337,283  * * * * * * * * * * * * * * * * * *	168,062 99,740 146,870 4,505 18,556 1,192,301 1,490  23,307 19,291 6,922 17,764 75,655 2,043 ) 144,982 1,337,283 1,671  * * * * 136,008 1,473,291 1,841 25,000 1,498,291 1,872 84,300 1,582,591 1,978





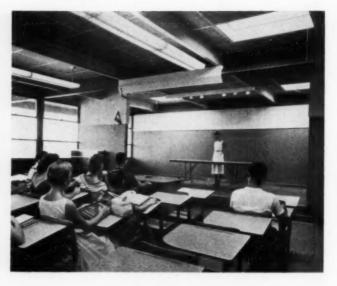
All photos by Stuart Weiner

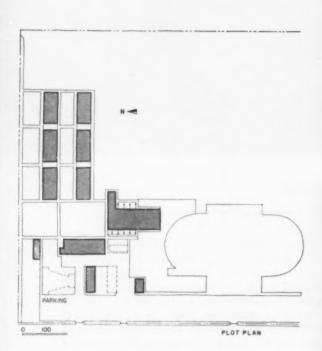
### UNIFIED CAMPUS PLANNING UNDER THE SUN

Washington High School, Phoenix, Ariz., Edward L. Varney, Associates, Architects & Engineers

Above: administration unit at right, multi-purpose building beyond and gymnasium at rear. Left: crisp courtyards are formed by interconnecting covered walks and corridors The quality perhaps most frequently missing in architecture is stimulating unity. When unity is approached it becomes all too easily monotony. Repetition is not rhythm, and in a day of standard units it is increasingly difficult to bring similar elements together in an orderly way that is not deadly too. Here — and even against the limits of a school-building budget — the architect has used the few means available to pull together a fairly large plant into a pleasantly unified whole. He has interrupted the long classroom blocks with openair penetrations, has varied the widths of the principal courts, has tied all together with a system of covered open-air corridors and crosswalks. And at the visual center of gravity he has placed the one curvilinear shape in the composition.











Left: typical classroom and speech arts room with presentation and rehearsal platform

Science room (left center) with exposed beam and glass fiber ceiling



Looking south to gymnasium from northernmost classroom building

#### WASHINGTON HIGH SCHOOL

In mushrooming Phoenix additions to schools are being started before the original units are finished. At present this school serves 800 pupils. Although it has been in use only a few months additional units are under construction. The auditorium, agriculture building, and second shop building - shown as future construction on plan and site plan — were part of the original scheme.

In this extensive campus plan the gymnasium closes the vista between the administration and multi-purpose buildings on the west and the twin classroom wings to the east. Each of these units has its rooms arranged back to back, and its length is divided into thirds by open-air lobbies. Thirty-two regular classrooms opening north or south - together with homemaking, science, commercial, speech arts, art, music, and shop spaces add up to very nearly fifty teaching stations throughout the school.

Generously sited, this is an excellent example of the campus plan with open peripheral and cross-connecting corridors. The latter serve to divide the open spaces between the buildings in plots nicely related to human scale in what otherwise might seem a very large, undifferentiated expanse. In the hot Arizona sunlight the extension of the roofs over the surrounding walkways allows all walls to be in shade during the critical hours of the day and lends to buildings and to the campus generally an oasis-like quality. The buildings are simply stated modular organizations with admirably clean detailing and a complete freedom from pretension.

The arched roof of the gymnasium is a happy combination of economics and visual organization set in harmonizing contrast to the rectilinear discipline of the over-all composition. Its curves and the colored tiles which are being placed on the fascias of the corridor roof eaves are the two principal accents in the campus.

Structural frame is steel on concrete foundations. Exterior walls are face brick throughout, and in the gymnasium and certain other special areas face brick is used as the interior wall surface as well. Generally, the interior wall finishes are painted gypsum plasterboard or plaster.

The roof is built up and topped with gravel. Glass fiber formboards are left exposed as the ceiling finish

in all flat decked spaces.

Sash throughout the school are steel projected. Entrance and interior doors are flush panel plywood. Doof hardware is wrought bronze. Thermal insulation is wood fiber and acoustical insulation is glass fiber. Floors are concrete slabs on grade. Interior partitions are steel stud, plastered.

In Arizona's heat provisions for ventilation and cooling add factors not common to most school-building programs in this country, and examination of costs on this school must allow that the remarkably low figures for this quality of construction include refrigerated cooling throughout except in gymnasium, cafeteria, and shop.

Edward L. Varney, Associates, Architects & Engineers



Library is located on north side of one classroom building

Multi-purpose room serves temporarily as cafeteria and auditorium





Gymnasium shows simple, uncluttered lines inside and out

#### WASHINGTON HIGH SCHOOL

Drainage & Sewage Sub-Total	953.049	1,191	10.67
Wells			
Ext. Paving	*		
Elec.	54,500		
Plumb.	78,000		
H & V	74,000		
General	746,549		
		Per Pupil	Per Sq Ft
		Pupils	Gross Sq Ft
		800	89,295

### **Fixed Equipment**

Kitchen

Science

Stage

Lockers

Cabinet work

Blinds & Drapes

### SUB-TOTAL (Fixed Equip.)

953,049 CUMULATIVE SUB-TOTAL 1,191 10.67

### Site Development

Clearing

Grading Planting

(by owner) 10,500

1,204

10.79

11.74

SUB-TOTAL (Site Dev.)

CUMULATIVE SUB-TOTAL 963,549

85,000

Land CUMULATIVE SUB-TOTAL 1,048,549 1,310

Equipment (movable)

CUMULATIVE SUB-TOTAL 1,143,549 1,429 12.80

95,000

### Fees

Arch.

**Educational Consultant** 

Landscape

Struc.

Mech. & Elec.

Civil

Acoustical

Color

(Conc. Sup. & Test)

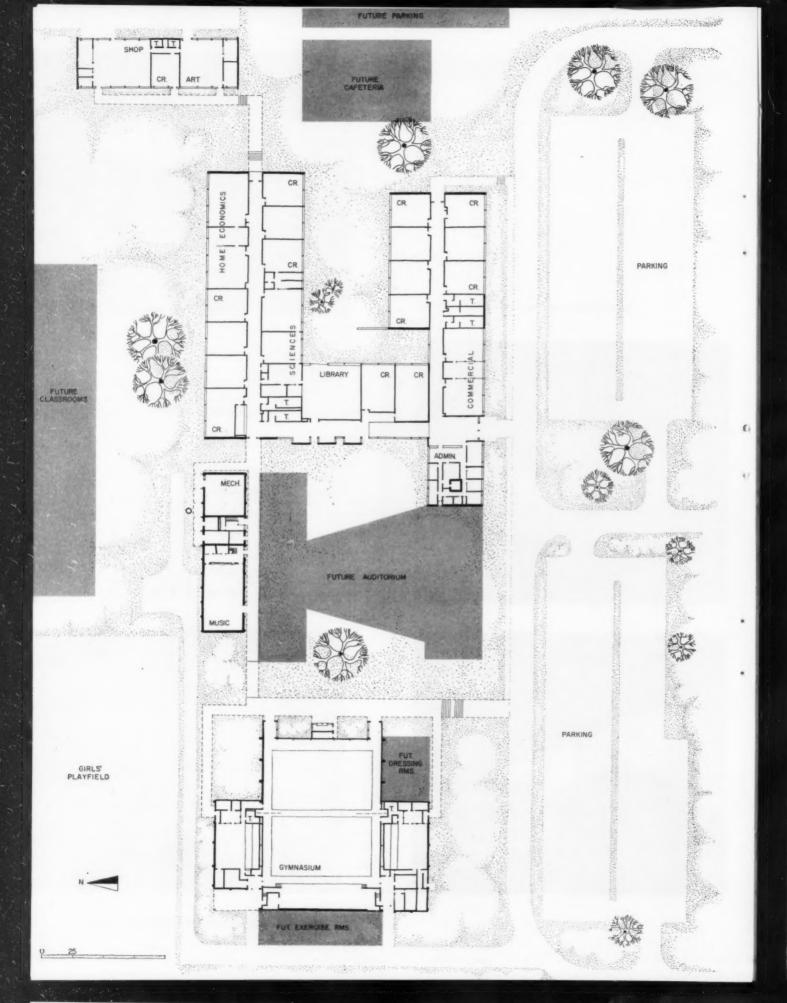
SUB-TOTAL (Fees)	45,752		
GRAND TOTAL	\$1,189,301	\$1,486	\$13.31

<sup>\*</sup> Included in sub-total immediately below

## Covered walkways will carry colored tiles on fascias









All photos by Art Hup

### IN THE NORTHWEST - EXTRA CONCERN FOR LIGHT

Mercer Island High School, Mercer Island, Wash., Bassetti & Morse, Architects

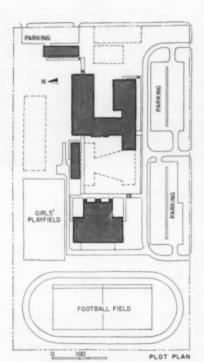
A PLEASANT DISPOSITION of its buildings upon the sloping site; carefully studied color relationships; a consistently maintained scale; and a rewarding extra concern for lighting in the sometimes gray Northwest, all recommend this school.

Perhaps the biggest change we have seen in the aspect of our schools in the past quarter century is their change in scale. Limitation to one story, expression of the structural bay, elemental profiling at the roof edge, and an almost complete avoidance of celebration at the entrances have all played their part in this and do so in this excellent example of school building art at midcentury in America. Most modest in the faces it turns to the world, its interiors are confidently and completely arranged for comfortable study.

Above: principal entrance to the main classroom building. Left: future construction will add auditorium, cafeleria, and more classrooms



Typical classroom overlooks courtyard to downhill wing



Luminous ceilings in science and homemaking rooms below

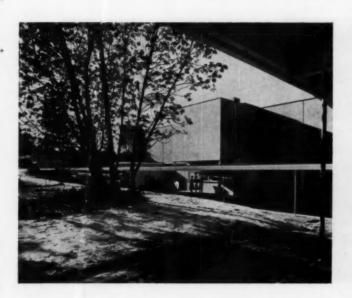






From the library a view into the principal court

Covered walks and steps connect buildings on sloping site



#### MERCER ISLAND HIGH SCHOOL

At present 800 students are accommodated in thirtytwo teacher stations distributed among four buildings. Still to come are a large auditorium, a cafeteria, and an additional classroom building.

All buildings are connected by covered walkways which move up and down the slope and along it. When all construction is complete a series of closed and partially closed courts will furnish that special sense of space which extended enclosure offers.

All administration is centered at the left of the principal entrance, with the high-ceilinged library nearby and central to the two main classroom wings. The library is expandable into two classrooms south of it. Corridors are double loaded, with classrooms opening to the north or south.

The music practice room is removed from the quiet study zones and grouped with the boiler room in a building at the approximate center of the eventual plan. Across the corridor from these a large auditorium with balcony and a generous stage and rehearsal space will be constructed in the near future. The auditorium entrance will open off the same entrance walk that serves the public approach to the ticket office in the gymnasium. This building is somewhat larger than is often found in plants of this size, and with an eventual doubling of the dressing rooms will provide complete and spacious facilities.

An art room, woodworking and machine shops occupy a fourth building also removed from the classroom zone. Except for that which is along the walls, there is no fixed equipment in the homemaking rooms in order to allow for variety in the curriculum and use of these rooms for other subjects.

Structural frame is steel with open web joists. Exterior walls are concrete block and asbestos cement tiltup wall panels. These are painted, as are the plasterboard interior wall surfaces. Roof is built-up on wood plank decking. Interior partitions are wood stud with ceramic tile on plasterboard in the classroom building toilets and glazed blocks in the locker rooms.

Classroom floors are asphalt tile on concrete slabs. All sash and sunshades are aluminum. Entrance doors are glazed in wood frames, interior doors are flush panel plywood. Downspouting is through interior steel pipe; flashing is galvanized steel. Thermal insulation is provided in rigid roofdeck material and asbestos cement wall panels.

Heating is by oil-fired hot water boilers with unit ventilators in the classrooms, with volume heaters in gymnasium, music and shop spaces. Toplighting through unit skylights and luminous ceilings is an outstanding feature of the school.

Bassetti & Morse, Architects; Elizabeth Brazeau, Landscape Architect; Donald G. Radcliffe, Structural Engineer; George S. Traberg, Mechanical Engineer; Beverly A. Travis & Assoc., Electrical Engineers; Harold S. Merritt, Civil Engineer; Vern O. Knudsen, Acoustical Consultant; Mary Bassetti & Emily Morse, Color Consultants.











		800	76,182
		Pupils	Gross Sq Ft
		Per Pupil	Per Sq Ft
General			
H & V	168,783		
Plumb.	in H & V		
Elec.	107,205		
Ext. Paving	*		
Wells			
Drainage & Sewage	*		
SUB-TOTAL	916.290	1.145	12.03

Courtyard is focus of classrooms and library



Fixed Equipment

Kitchen Science

Stage

Lockers

Cabinet work

Blinds & Drapes

SUB-TOTAL (Fixed Equip.)	916,290	1,145	12.03

### CUMULATIVE SUB-TOTAL

### Site Development

Clearing

Grading

Planting

SUB-TOTAL (Site Dev.) 9,835

CUMULATIVE SUB-TOTAL

926,125

Land 15,000 CUMULATIVE SUB-TOTAL

941,125 1,176

1,158

12.16

12.35

191

Equipment (movable)

90,000 CUMULATIVE SUB-TOTAL 1,031,125

1,288 13.53

### Fees

Arch.

**Educational Consultant** 

Landscape

Struc.

Mech. & Elec.

Civil

Acoustical

Color

(Conc. Sup. & Test)

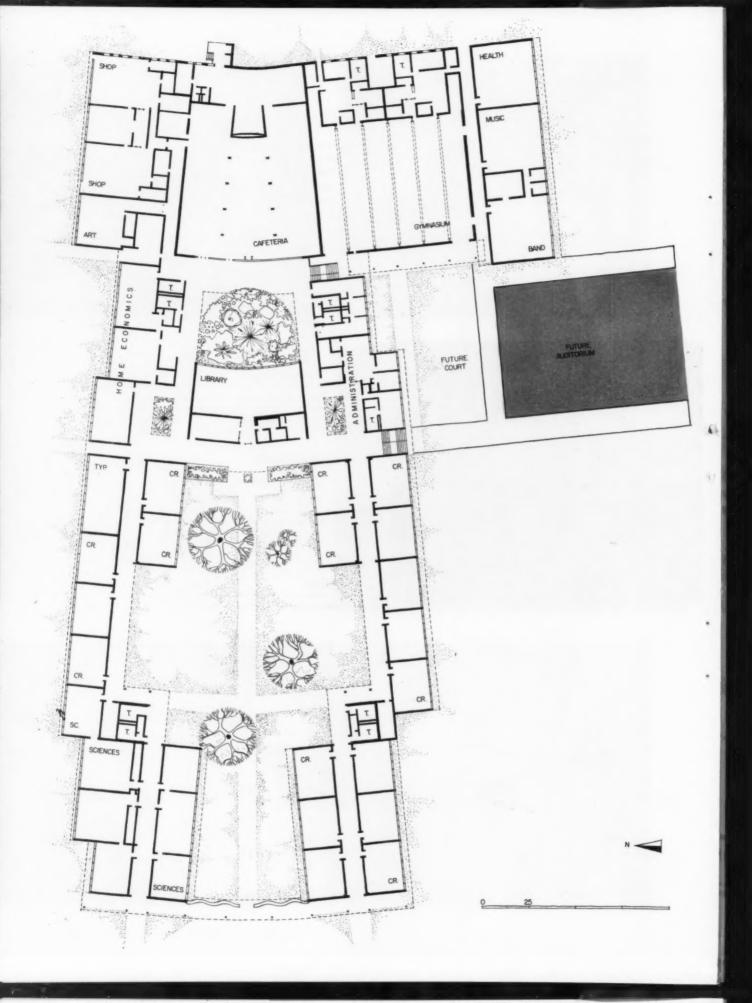
SUB-TOTAL	(Fees)	

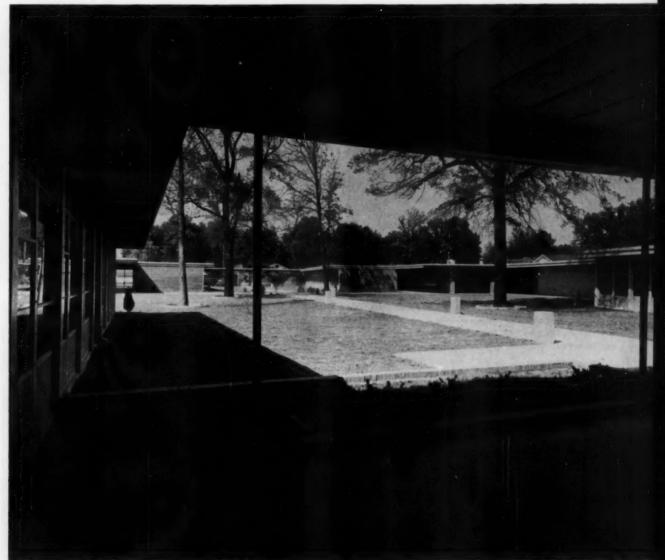
GRAND TOTAL

\* Included in sub-total immediately below

56,243 \$1,087,368 \$1,359 \$14.27

Extra large gym occupies separate building





All photos by Earl Saunders

### COURTYARDS INTEGRATE LOW-BUDGET SCHOOL

Horace Mann High School, Little Rock, Ark. Erhart, Eichenbaum, Rauch and Blass, Architects

The size of a building budget — per classroom, per pupil, or per sq ft — is not necessarily an indicator of the quality of the architecture that will be achieved under it. A rich budget often assures little more than a rich variety of visual mistakes; a lean budget sometimes urges a restraint which is found most becoming. Blessed with a tree-filled site, but little money, the architects of this school happily spread their classrooms along a series of diminishing and enlarging courtyards and achieved a maximum effect with severely limited means. While it might be difficult to rationalize completely the wedge-shaped plan, it does afford a reversed perspective from the library end which helps overcome the length of the extended classroom wings and visually frees one wing from the other. This school won a First Honor Award in the Gulf States last year.

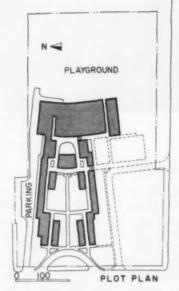
Above: the inner court looking loward main entrance gales. Left: 1000 pupils are accommodated in twin wing building





Science room is oriented to north light

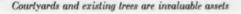








Main entrance is at west end of restricted site





On a limited site and rigidly restricted budget these architects have arranged around a series of courts a high school low in cost and high in satisfactions, not the least of which is the effect of the low, extended building among the fine trees.

The addition of four classrooms along each side of the inner court will bring the pupil complement to 1120. An auditorium remains to be built, and although it will bring up unit costs somewhat, they will still be remarkably low, thanks to a fairly lean programming in terms of finishes and site development, open corridors, and a skillful organization of space and materials.

The series of courts along the principal axis provides a strong integrating element and pleasant vistas from the single- and double-loaded corridors. Noisier areas are grouped at the east end away from the classrooms and in such a way as to be easily available for community activities after school hours. Art, shops, homemaking, typing, and science rooms are located in the north-lighted wing. The library links the two classroom wings and is the principal plan focus.

Twenty-two regular classrooms, three laboratories and eleven special activity rooms total thirty-six rooms which cost just under \$25,000 per room on a total project cost basis.

The building is laid out on an 8-ft module with pipe columns supporting steel beams which, in turn, carry 2-ft centered bulb tees and a glass fiber panel deck, covered with lightweight insulating concrete and built-up roofing. All structural elements are exposed and painted. Pink face brick alternates with steel window walls on the exterior. Corridor walls are generally load-bearing.

Kitchen, toilet, and locker rooms have structural glazed tile walls and ceramic or quarry tile floors. Classroom floors are concrete. Exterior steel panels are coral, turquoise, or yellow. Sash and structural steel are light gray. Doors are natural finish birch plywood, solid core for exterior, hollow core for interior; with satin finish aluminum hardware.

Heating is by hot water convectors and in the library, gymnasium, and cafeteria by hot water activated air handling units, where mechanical air movement was desired. Cross ventilation in classrooms is achieved through continuous louvers located within the depth of the beams at the top of the corridor walls. Kitchen, locker rooms, and toilets are mechanically ventilated.

Interior color schemes use pink brick, natural brick, and turquoise painted steel bents in the gymnasium. The cafeteria has pink brick walls; the glazed tile panels are light gray to match the structural steel; dropped plaster ceiling is turquoise. Classrooms are either yellow or green with gray or dark green trim. A majority of the cabinet work is built in and finished naturally.

Erhart, Eichenbaum, Rauch & Blass, Architects; Landauer & Shafer, Mechanical and Electrical Engineers.

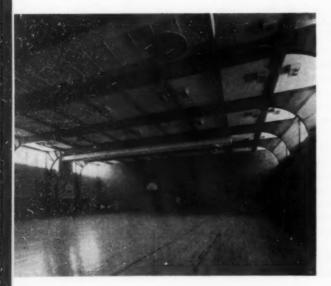




Cafeleria is across court from library



Open corridor vistas (right) are interrupted by light courts



Steel bents are turquoise; walls are pink brick

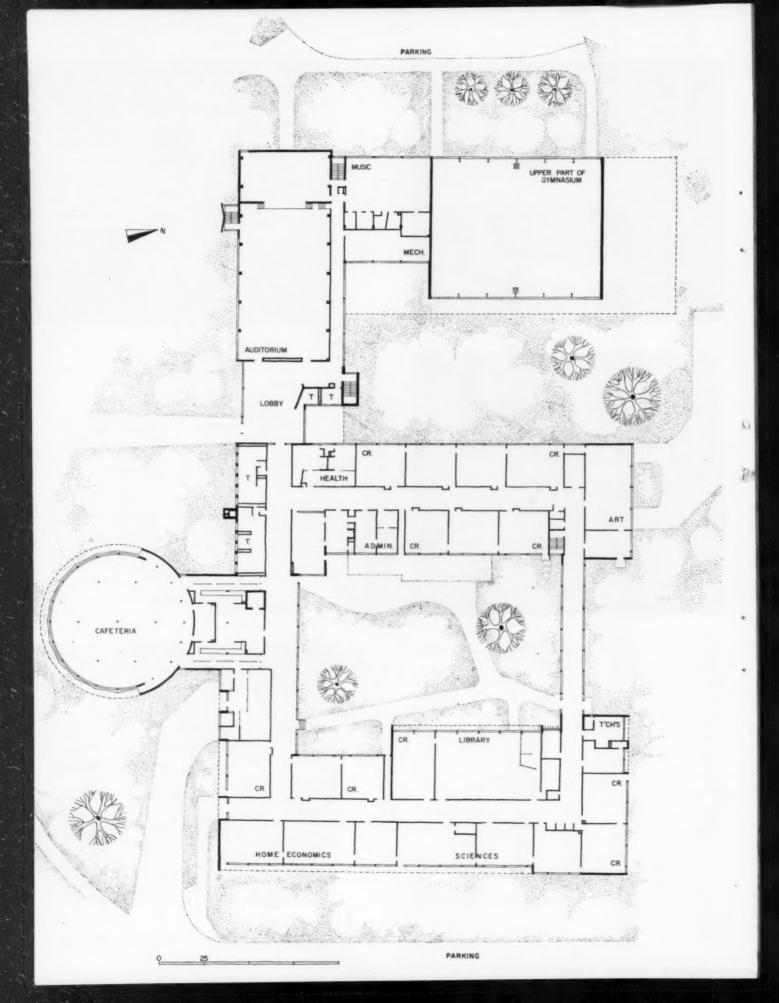




Bank of lockers in open air corridor

### HORACE MANN HIGH SCHOOL

SUB-TOTAL (Fees)			
(Conc. Sup. & Test)	43,064		
Color			
Acoustical			
Civil			
Mech. & Elec.	*		
Struc.			
Landscape			
Educational Consulta	nt		
Arch.	*		
Fees			
CUMULATIVE SUB-TOTAL	851,735		10.47
Equipment (movable)	59,500		
COMPLETIVE OUB-101AL	, , 2, 200	174	7.14
Land Cumulative Sub-Total	74,500	792	9.74
CUMULATIVE SUB-TOTAL	717,735	718	8.82
SUB-TOTAL (Site Dev.)	31,202		
Planting			
Clearing Grading			
Site Development			
CUMULATIVE SUB-TOTAL	686,533	686	8.44
SUB-TOTAL (Fixed Equip.)	25,252		
Blinds & Drapes	07.070		
Cabinet work			
Lockers			
Stage			
Science			
Fixed Equipment Kitchen	25,252		
SOB-TOTAL	001,201	001	0.13
Drainage & Sewage Sub-Total	661,281	661	8.13
Wells			
Ext. Paving	*		
Elec.	52,397		
Plumb.	74,858		
H & V	71,719		
General	462,307		1.
			Per Sq F
			Gross Sq Ft
		1000	81,300





All photos by Joseph Molitor

#### PLAN AND PROFILE EXPRESS SCHOOL FUNCTIONS

Westwood High School, Westwood, Mass.; Coletti Brothers, architects

difficult to achieve an appreciable degree of individual character in a school. Generally this seems a blessing after decades of "expressive monsterism." The single story, widely dispersed building units which are today's high schools almost rule out either the contrived or unconsciously assertive gestures which we have come to deplore. A quietly negative quality is preferred to the unique if a happy balance can not be found. Here, in a school arranged pleasantly and conventionally around two courts, the architects have achieved a pleasant degree of individual expression through roofing the acoustical profile of the auditorium and urging a nicely articulated circular cafeteria. The two forms and their openings are well related on either side of the main entrance.

IN A TIME OF STRINGENT building budgets it is often

Above: Portion of cafeteria with auditorium and main entrance in background. Left: Existing building plan for 500 of eventual 900 pupils

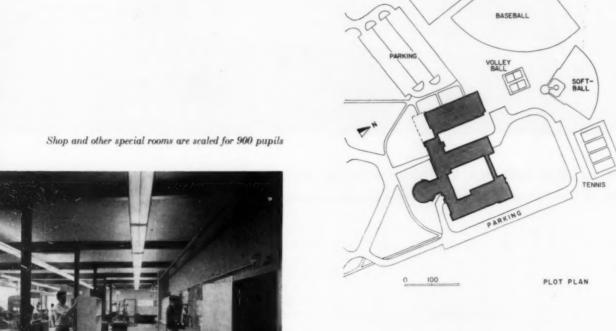


Typical classroom looking out upon courtyard



Art room with sloping glass wall facing north

FOOTBALL



North elevation with art room at right



### WESTWOOD HIGH SCHOOL

When completed this school will accommodate 400 pupils in addition to the 500 who are presently provided for. Only a classroom wing must be added, since the heating plant, auditorium, library, cafeteria and special classrooms have all been sized to allow for future expansion.

For the time being the square foot costs and particularly the per pupil costs are understandably high for this region. With the addition of the relatively inexpensive classrooms the final unit costs promise to be surprisingly low for a program which has asked for generous spaces and quality construction.

The circular cafeteria is perhaps the most apparent evidence of an approach which has sought to put pupil pleasure first. This glazed pavilion — held neatly away from the rest of the building — looks out onto the 23-acre campus and provides an effective interruption in the students' daily progression from one rectilinear space to another.

Almost all classrooms have east or west light and most of them, including the library, look out into one of the two landscaped courts.

Auditorium, gymnasium and music department are located in a separate wing at some remove from the quiet classroom areas. All of these spaces are especially well equipped. A careful adjustment to the site contours has provided a sheltered terrace underneath the auditorium.

Structural frame is steel. All exterior unit masonry is a deep red Harvard water-struck brick which is also used in the side and rear walls of the auditorium. Proscenium wall is plaster with colored tile inserts; toilet walls are structural glazed tile. All other interior walls are cinder block finished in two coats of rubber latex paint. Rooms are in a variety of two-tone combinations of yellow, turquoise, green, blue, gray and white. Webs of exposed steel beams are deep blue green, flange undersides are white.

Floors are asphalt tile on concrete. Ceilings are acoustic tile and composition board. Windows are steel. Exterior doors are hollow metal; interiors are flush oak veneer solid core.

Roof is 4-ply built-up tar and gravel; flashing is copper; gravel steps are aluminum. Classroom wing spandrels are corrugated concrete; cafeteria spandrels are porcelain enamel. Thermal insulation is poured gypsum.

Heating system is low pressure steam; Scotch type steel fire tube boilers with integral oil burners; unit ventilators; mechanical exhaust; radiant heat in auditorium floor.

Coletti Brothers, Architects; Leo T. Doherty, Educational Consultant; Chambers & Moriece, Landscape Architects; Linenthal & Becker, Structural Engineers; Merrill Associates, Heating & Ventilating Engineers; Daniel J. Sullivan, Plumbing Engineer; C. W. Rickered, Electrical Engineer; Bolt, Beranek & Newman, Inc., Acoustical Consultants

Below: sheltered terrace under auditorium





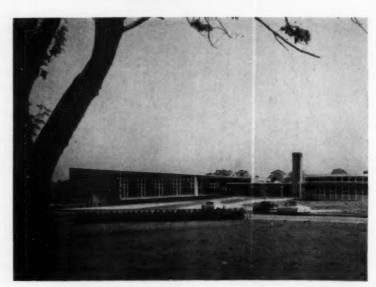
Large library faces west into courtyard





Auditorium reflects quality programming in school

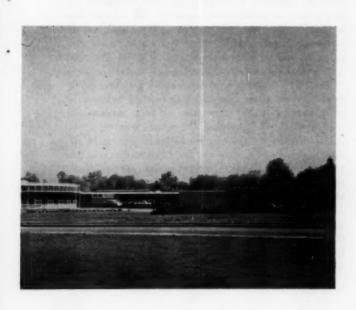




### WESTWOOD HIGH SCHOOL

	500	99,33
		Gross Sq F
	Per Pupil	Per Sq F
759,409		
218,005		
67,087		
110,020		
1,154,521	2,309	11.62
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1,154,521	2,309	11.62
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125,548		
1,280,069	2,560	12.88
20,100		
1,300,169	2,600	13.08
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1,430,169	2,860	14.39
	218,005 67,087 110,020 1,154,521 * * * * * * * * * * * * * * * * * * *	Pupils Per Pupil 759,409 218,005 67,087 110,020  1,154,521 2,309  *  *  *  *  125,548 1,280,069 2,560 20,100 1,300,169 2,600 130,000

Cafeteria and auditorium flank main entrance in south



Circular cafeteria is carefully relieved of clutter

Civil Acoustical Color			
(Conc. Sup. & 7 Sub-Total (Fees)	Fest) 87,619		
GRAND TOTAL	\$1,517,788	\$3,035	\$15.28

**Educational Consultant** 

Landscape Struc. Mech. & Elec.

Fees Arch. face of these and other summer indictments.

Mr. Holman Harvey is the author of the Digest article. He seems to have prepared somewhat more for his job — traveled and got up some figures — but after bravely starting to distribute blame, he too winds up on the architect's back. The piece begins with an account of the wide variation in cost of two "not far distant" schools with identical enrollments. He neither documents the instance nor suggests its frequency. When he deplores spending funds on "facilities befitting an exclusive club" one recalls Miss Thompson's gymnasium which was "worthy of a fashionable athletic club." For people so preoccupied with the haunts of the rich their knowledge of those places appears almost as meager as their knowledge of today's typical school. This author goes on to connect in one sentence both lavish spending and "America's desperate plight for sheer lack of classrooms." Since one community's restraint cannot conceivably satisfy another's shortage, this association of ideas may be interpreted as (1) a moral judgment: (2) a non sequitur: or (3) a misleading presentation. On the subject of extravagant building he continues to generalize from some fantastic and surely unique instances. Six-figure clock towers, 60-ft false chimneys, and Grecian "pillars" are mentioned, along with reports of some average and some remarkably low sq ft construction costs. Most remarkable is a high school in "rural [sic] Youngstown, Ohio," costing \$7.24 per sq ft and built of "face brick, glass block, and heavy aluminum framing." If you can't tell what that aluminum is framing, reflect that you are probably one of the nine out of ten architects whom Mr. Harvey had earlier dismissed as knowing "next to nothing of the economies possible." Costs are quoted, but their basis never explained. Educational programs, planning, materials, construction, don't really get into the discussion. Prefabricated schools are suggested; and the voter is urged to "act on the knowledge that pupils don't ask for or need the palaces that architects dream up for them."

And with that Mr. Harvey joins Miss Thompson, and another great segment of reading America is furnished a false image of the architect, but one that can be too easily retained. When are we going to get a straight story in the public prints? How can all those who one day will have to help reach decisions learn what the architect's responsibility is and what it is not; learn the distinction between cost and value?

You get what you pay for. Do you know what you want? You can get schools at \$5 a sq ft or \$25. A recitation of isolated unit costs means almost nothing. Rarely do two communities need identical plants. It is the responsibility of town officials, school boards, and interested citizens to develop a picture of the total community needs against its predicted future and against its anticipated ability to meet those needs. Health and welfare, fire and police protection, streets and sewers, recreation and administration must be examined together with education in determining the share each shall have in the tax dollar. Is it really neces-

sary to point out that in this the architect plays only the role of an individual voter, and no role in deciding how educational funds will be distributed among new construction, salaries, equipment, maintenance, etc.? His advice and service are sought in the design of schools programmed by school boards, educators, and their consultants. It is not within his authority to decide what facilities the school shall provide, nor, in the final analysis, can he do more than recommend even the planning and construction details that constitute his design.

Countless factors operate to produce widely varying programs, buildings, and costs. At the outset, the very value placed on education differs widely. Where books are revered, libraries will be bigger; and where basketball, gymnasiums. Different values produce different educational programs and different buildings; and so do different climates, frost depths, topographies, subsoil conditions, vegetation, distances, land costs, labor costs, community incomes, and pupil population - present and projected. Even if it were possible to completely measure and compare costs, it would never be possible to compare values - because it is impossible to assess another's satisfaction, to put a price on another's values. A careful examination of the five schools presented here will show that to compare only their unit costs is as meaningless as to compare only their facilities or their finishes. It is possible to say that one is cheaper or that one is bigger or that one is better, but it would be very difficult to say objectively that one is cheaper and bigger and better.

And yet there are compelling reasons to find ways to compare costs more accurately than we generally do. Too often, unit costs do not include land costs or site development or equipment or fees or all of them. Observe on the preceding pages how significantly these can affect comparison. Observe, too, how necessary it is to furnish with the costs accurate information on enrollments - actual, designed, and projected; on facilities (provided in terms of similarly computed dimensions), on construction, finishes, and educational, mechanical, and electrical equipment; on landscaping and the provisions for playing fields and courts and parking. And we need more than unit costs. We need a consistent way of arriving at the net educational area - that area actually used for instruction. The difference between gross area and this kind of net can be truly significant. We need also to keep accounts in such a way as to arrive at the actual building costs. These divided by the net educational area yield the most significant figure of all: the construction cost per educational sq ft. From this kind of data all the important relationships can be developed for a given school and for the comparison of two or more.

If the barbs of this outrageous summer can serve to goad architects into a frank, full, and continuing explanation of their stewardship, the public may yet come to realize that in the design of buildings you do get what you pay for — and often a great deal more.

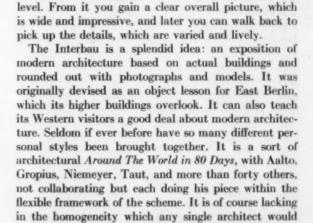
John Knox Shear



Model of redevelopment scheme for the Hansa district of West Berlin; individual buildings by famous architects

# INTERBAU

A Quick Look at the International Building Exhibit in Berlin by ROBIN BOYD



THERE IS ENOUGH in the park to detain a student of modern architecture for a week, but the organizers considerately have provided short cuts. You can travel the exhibition roads on a midget canvas-roofed train,

overlook it all from a plastic bubble drawn to the top

of a giant twin-armed crane, take a low-flying helicopter,

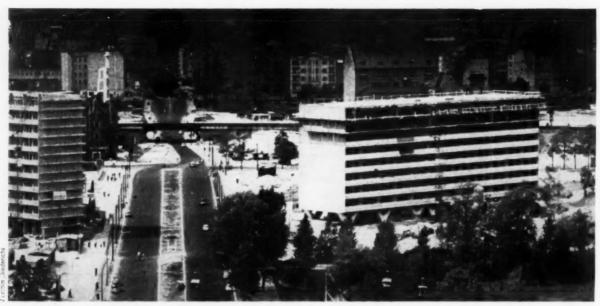
or pay your 1.50 DM and ride the Sessellift for a kilometer cross-cutting the grounds. This is a tremulous and not un-alarming journey by cable hung at tree-top

First in sight from the chairlift are the permanent projects of the new town being built at the side of the Tiergarten: housing, ranging from single-story onefamily units through walk-up flats to elevator apart-

have created, but it is a successful architectural pleasureground and will be an historically important example of the unsettled state of architecture in the late 1950's.



Sketches by the author



"Oscar Niemeyer raised his block on stills, not unexpectedly . . ."

ments, a church, a school, the beginnings of a shopping and cinema center. About a dozen big buildings are finished and furnished for exhibition, others are busily under construction and some are merely set out on the rubble-strewn ground. All have hoardings in front illustrating their plans and relating the previous highlights of their architects' careers. Restaurants, cafés, and numerous subsidiary temporary displays ("City of Tomorrow," etc.) constructed of spaceframes, ropes and color, are scattered among the trees and flowerbeds and ponds of the park. At the end of the chairlift in the far corner of the ground the foreign exhibits are housed in ingenious, hot, temporary canvas and scaffold-pipe pavilions. Beyond the grounds but still a major feature of the show is the American gift, The Congress Hall, standing on the banks of the Spree and the fringe of the city's Iron Curtain. Throughout West Berlin several famous historical and important new buildings, including Le Corbusier's latest Unité d'Habitation ("Type Berlin," and non-Modulor), are drawn into the act by means of guide-booklets.

The meat of the show is, of course, the group of completed or nearly completed big apartment blocks by the various celebrities representing fourteen different countries. The plan of the district is aimless enough. It allows good breathing space around the units but adds no particularly distinguished quality to the spaces and vistas between them. Each architect had to work within the discipline of strictly conventional, economical apartment design. In other words, there was nothing to be done but to make each building a king-size pack of cigarettes resting on its narrow side. The plan of each

apartment was limited to some tight arrangement of the usual rooms, and nothing much in the way of communal interior space was required. Thus almost all interest centers on the various exterior treatments, and here each star architect managed to impress quite powerfully something of his own character on the package he handled. There is not a single all-over curtain wall, nor any evidence of the somewhat prim functional-classic of much new European work. The total effect is thoughtful and high-spirited.

Oscar Niemeyer raised his block on stilts, not unexpectedly, and then he gathered the column loads into pairs under the lowest floor, carrying the building on a series of concrete V's as if it were a party cake carried on the finger and thumb tips of a number of experienced waiters. Alvar Aalto creased the plan of his cigarette pack indecisively as if it were half empty. His is a bald building with no pretensions whatsoever and thus a certain detached dignity.

Pierre Vago, from Paris, contributed the most striking block. The seven stories of windows on the main façade he distributed in accordance with internal logic but to no apparent external scheme. Then he covered the wall space between them with glass in random rectangles of solid color — gray, white, pale blue, sharp mustard. Against this disruptive patterning the window openings lose identity and become merely darker gray elements of the biggest neo-Mondrian abstract in the world. Its bold effect may be classed as entirely successful if you are prepared to allow architecture to rely wholly on a surface treatment one centimeter thick.

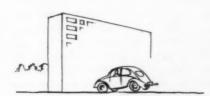
Fritz Jaenecke and Sten Samuelson of Sweden have



Alvar Aalto: "a bald building . . . and a certain detached dignity"

INTERBAU

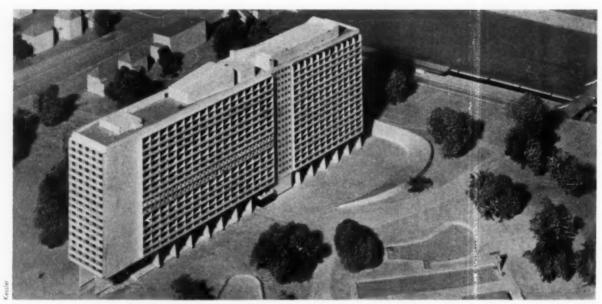




"Pierre Vago contributed the most striking block"



orl E. Jacobs



Le Corbusier's latest Unite d'Habitation "Type Berlin"

built one of the biggest and most straightforward slabs: white, with powder-blue balconies on one side and tangerine on the other. An apartment displayed on the first floor is probably the most open, spacious and sophisticated in the *Interbau*. It features a copper fireplace whose chimney disappears into a ceiling over which are nine more stories of apartments.

The Gropius block is raised and curved, and its main elevation is almost as busy as the Vago abstract. But its pattern is made up of nothing but architectural and functioning elements: balconies, windows, projections, recesses. Not only the windows but to a certain extent the separate apartments retain identity on the exterior. It is the most mature and subtle building present, and an unmistakable descendant of the Baühaus.

In the exhibition pavilions the *Interbau* is consistently competent, gay and comprehensive. Among the multitude of photographs almost every well-known modern building or architectural dream since 1930 is represented. Frank Lloyd Wright's mile-high "Illinois" Tower is shown ("das hochsle bauwerk der welt") with nothing to indicate that it is not already up and completed. The foreign displays are spotty, Canada probably being wisest by confining its attention to one splendidly presented model of one project, Don Mills in Toronto.

Some of the temporary amenities in the park are a canvas delight. In the shadow of the bullet holed walls of the Bellevue Palace one open-air café is shaded by a sail of white canvas, almost eighty feet square, guyed down at the edges and strained up above head height by eight internal props cushioned with plywood star-

shaped cups against the canvas. Each apex is thus rounded rather than pointed and the whole looks like a tight white sweater worn over some surrealistic foundation garment. Another shelter consists of big squares of canvas each with two opposite corners propped up and two strained down. There are five of these, colored blue, yellow and tangerine on the underside, and as you watch them cavorting over the refreshment tables you realize that the hyperbolic paraboloid is essentially a playful, humorous, even skittish shape. With this in mind you leave the *Interbau* proper by a gate behind the café and approach the Russian sector. About a mile away, down a gray stretch of the River Spree, the hyperbolic parabolic *Kongresshalle* sits like a well fed butterfly on the green bank.

This congress hall (Hugh Stubbins Associates, architects, with W. Duttmann and F. Mocker, Berlin) measures up well against almost any rule of modern architecture one can think of applying to it. It has, unquestionably, a vital idea which is strong enough to carry the whole composition. Its parts are articulated so clearly that an approaching visitor, knowing nothing of its contents, can tell in a general sort of way what he should expect to find where. It also has confidence, strength, and an open, honest expression. The interior (which will house the U.S.A. Interbau exhibit) was not ready for the opening, and when I visited it, finishing touches were being applied with unhurried efficiency. Teams of middle-aged women shovelled at the surrounding landscaping, painters were touching up the concretors' work, and a few tourists with cameras dangling at the alert position picked their way between



Architects Fritz Jaenecke and Sten Samuelson: "one of the most straight-forward slabs . . ."

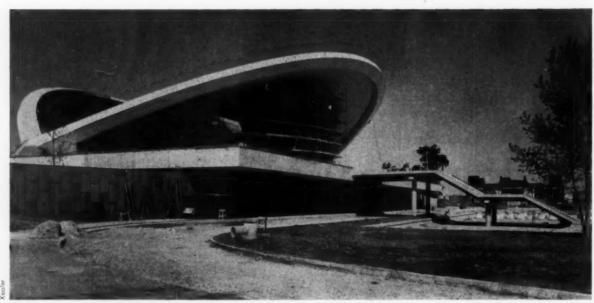
INTERBAU



Walter Gropius and Prof. Wils Ebert (Berlin): "the most mature . . ."



or! E. Jacobs



Hugh Stubbins' Congress Hall; "about a mile away . . . sits like a well-fed butterfly"

scaffolds. Under the circumstances it was impossible to examine this important propagandist American-German building in detail, but it was certainly not too early to study the shape. And whatever is done now with colour, granite, or slate facing, the effect on visitors—and on eyes staring from behind the Curtain, presumably starved for Western Culture—will depend entirely on the curling, swirling, dominating shapes above the firm rectilinear base. Ignoring for the moment the practical considerations of planning, structure or acoustics, I wanted to consider this building purely as external form, as the political monument which it is intended to be. What character will it communicate to those culture-starved eyes behind the curtain?

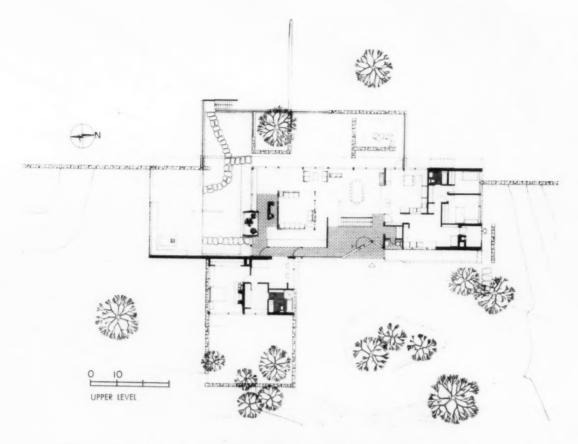
This very permanent-looking saddle stretched between hefty edge arches is not sprightly like the temporary canvas saddles over the garden café. It has not their movement or irresponsible beauty. It may be called exciting. It is not gay. Yet it is not solemn. Jaunty is the word, I decided finally; it reminded me of a dashing fellow in a Homberg hat.

The conviction and vitality of the Hall's shapes are a pleasure to behold, especially after the formal boxes of so many of the apartment blocks. The hall brusquely points a way ahead while Vago's huge abstract elegantly points backward. But unless jauntiness was the desired and calculated effect in this case, it should warn us that a strong expression in form, while welcome in this curtain-wall era, is not necessarily enough in itself even if it is efficient, economical, brilliant, beautiful and exciting. Ultimately we will want it also to be exactly fitting to the psychological situation.

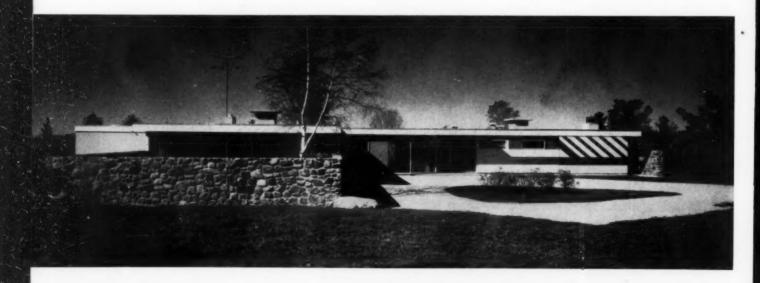
INTERBAU







This version of the bi-nuclear house plan (long associated with architect Breuer) is conditioned by its placement upon a slope. Separation of parents' and children's zones is accomplished here by placing one above the other. Master suite, living and dining areas are on the upper level; children's quarters, guest room, play room and garage are below. Since the owner's children are old enough not to require constant care and, indeed, often seek their own privacy, such an arrangement is peculiarly appropriate.









Photos at left and right show the entrance façade, oriented to the east. The detail at right is of interest for the manner in which materials, textures, colors, and light-and-shade are played against each other both for visual effect and to reduce apparent size.

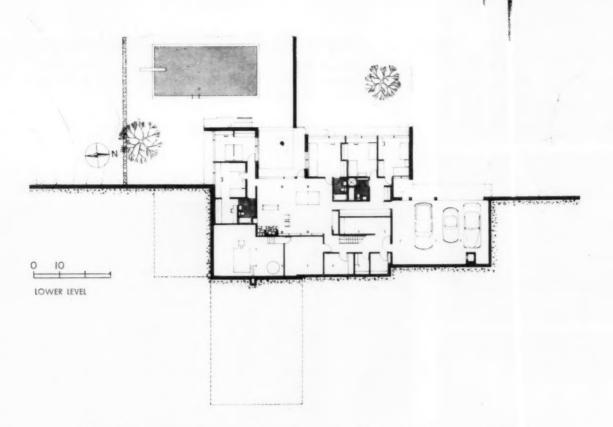
Above, from top to bottom: the living area, dining space, and main kitchen

### THE GAGARIN HOUSE, IN CONNECTICUT

Marcel Breuer, Architect; Herbert Beckhard, Associate; Fred Dubin Associates, Mechanical Engineers; Farkas & Barron, Structural Engineers







Although this is a large house — with ample room for entertaining sizable groups, plus master suite and six bedrooms—its size has been deliberately understated. The owner had no desire to impress his visitors; preferred instead an informal, friendly atmosphere. The architects attacked this problem not so much in terms of scale but rather as a matter requiring careful, knowing handling of material, detail and color — both exterior and interior. The result achieves a comforting sense of warmth, is pleasing to the eye, and is impressive for its lack of impressiveness.







The photos on these two pages show the house from the lower level, which has access to the pool and rolling meadowland beyond. The pool is of sprayed white concrete, set in a terrace paved with blue-stone.

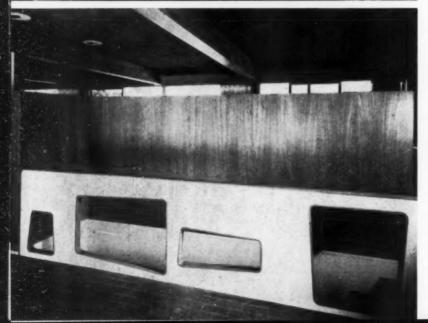
The construction generally follows a scheme of masonry relaining walls against the slope, with wood framing above. The sliding screens and double-glazed sash are architect-designed; the doors are flush wood panels; the floors are variously of brick, teak, rubber tile, and ceramic mosaic tile











### THE GAGARIN HOUSE

The interestingly formed fireplace, which achieves the quality of free-standing sculpture, is of concrete, bush-hammered for texture and to expose the pebble aggregate.

The unusual stair railing is faced both sides with plywood, painted white, with edge-bindings for its openings and periphery of natural teakwood to match the enclosure paneling



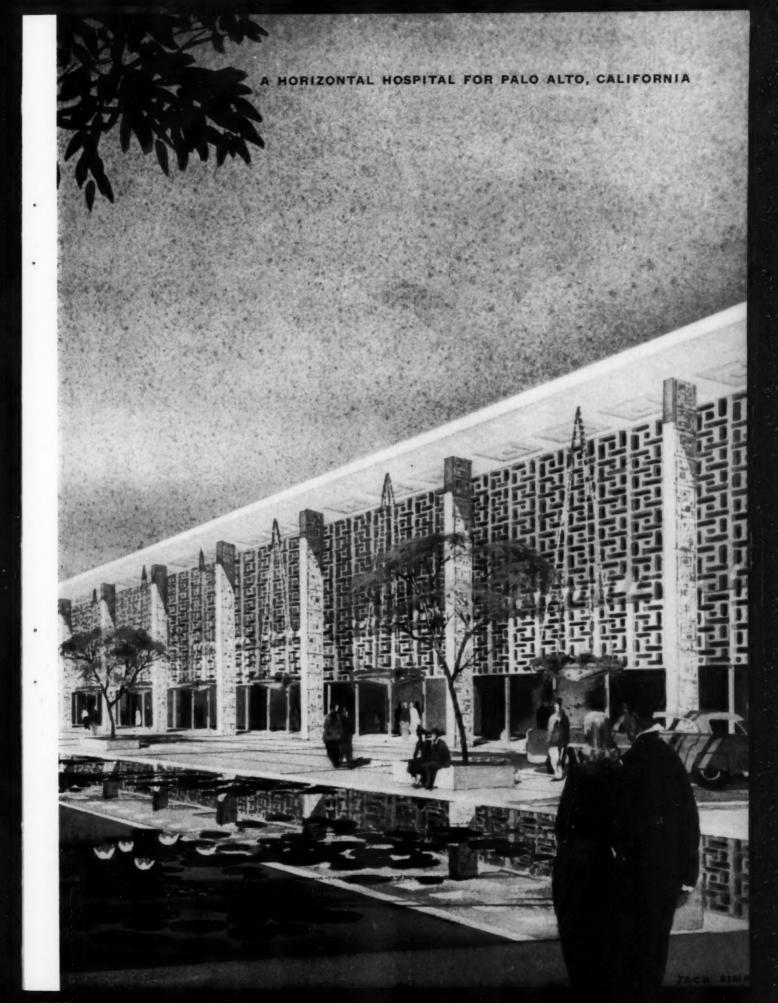
Palo Alto Hospital and Stanford Medical Center, Palo Alto, California. Edward D. Stone, Architect

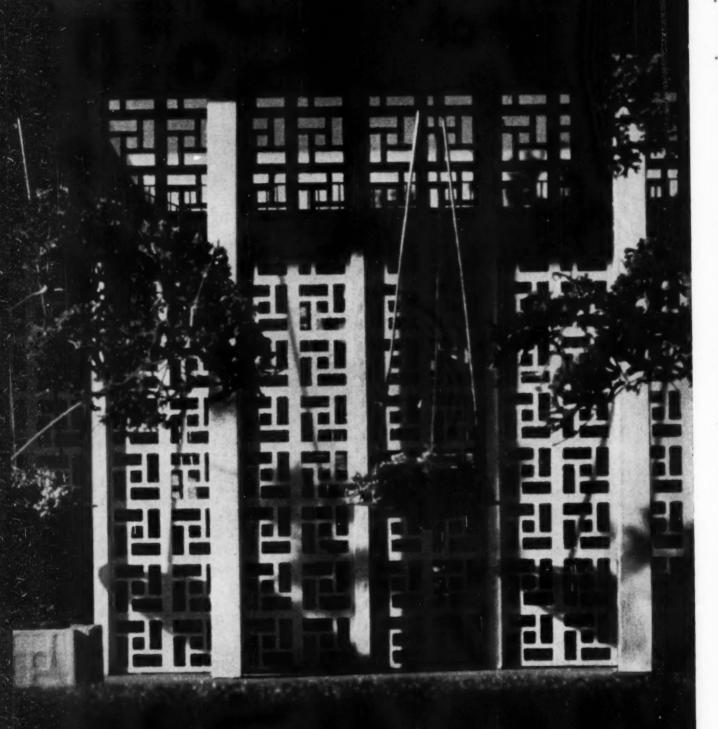
TWO APPROACHES TO HOSPITAL DESIGN:
THE HORIZONTAL SCHEME AND THE VERTICAL

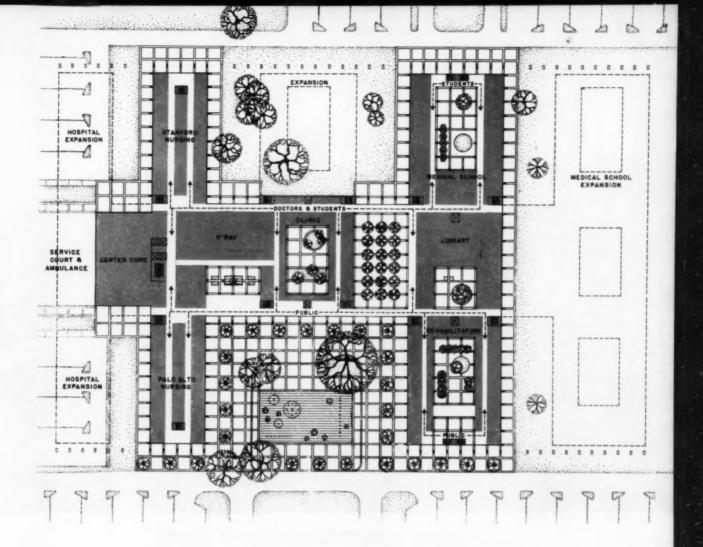
Central Hospital of Social Security for Employes (S.S.E.) in Lima,
Peru. Edward D. Stone and A. L. Aydelott, Associated Architects





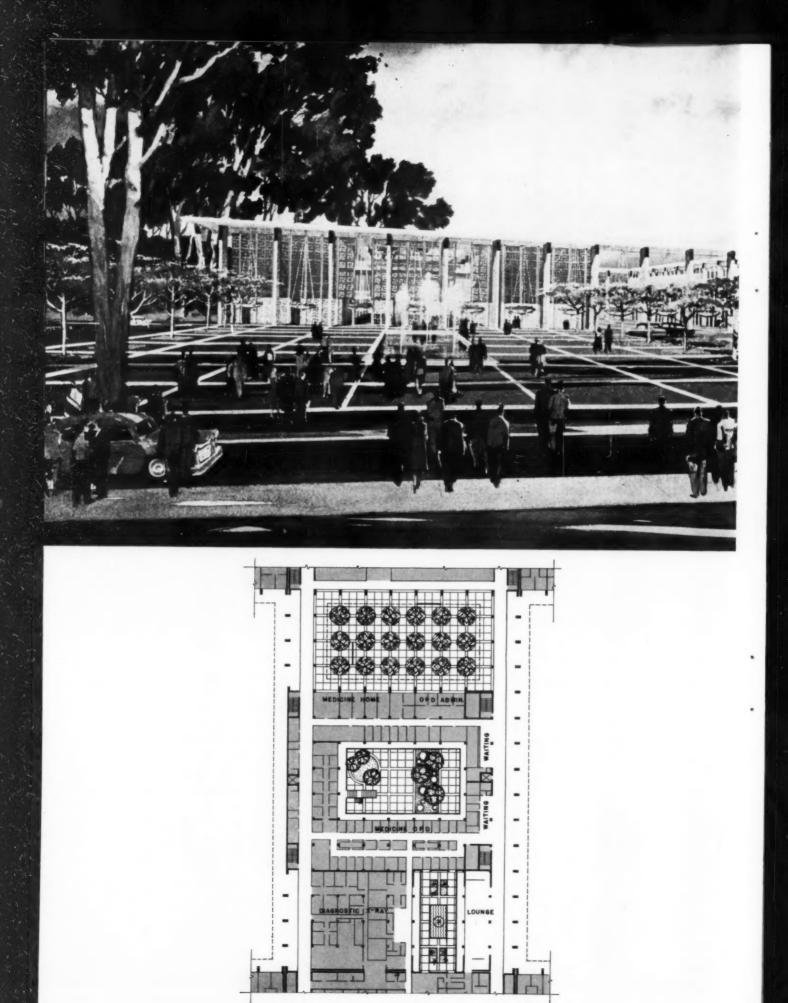






### A HORIZONTAL HOSPITAL FOR PALO ALTO, CALIFORNIA

Edward D. Stone's tradition of patterned screens, courts, and pools here adds serene charm to a great medical center — a place where visual pleasure can vastly encourage the convalescent. It can well be described as a "garden hospital" with a strong aesthetic discipline. The patterned colonnades skillfully connect units of three stories and basement, to house an array of facilities for Stanford University and the city of Palo Alto. As indicated above, these include: the Stanford University medical school, a library, a rehabilitation center, clinics, and a medical and service core serving two hospital pavilions (one operated by Palo Alto, one by Stanford). Each unit can be expanded around successive courts as shown by dotted lines. The scheme now under way has 475 beds; when expanded there will be 1000. Clear circulation patterns — vertical and horizontal — have been established for students, staff, in- and out-patients. Thomas D. Church is Landscape Architect. Mr. Stone also wishes to credit the Trustees of Stanford University and president J. Wallace Sterling and the city council and City Manager, Jerome Keithley, of Palo Alto, for devoting the past two years to the planning of this outstanding medical facility.



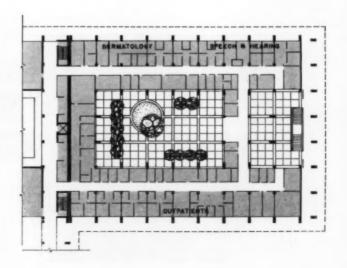


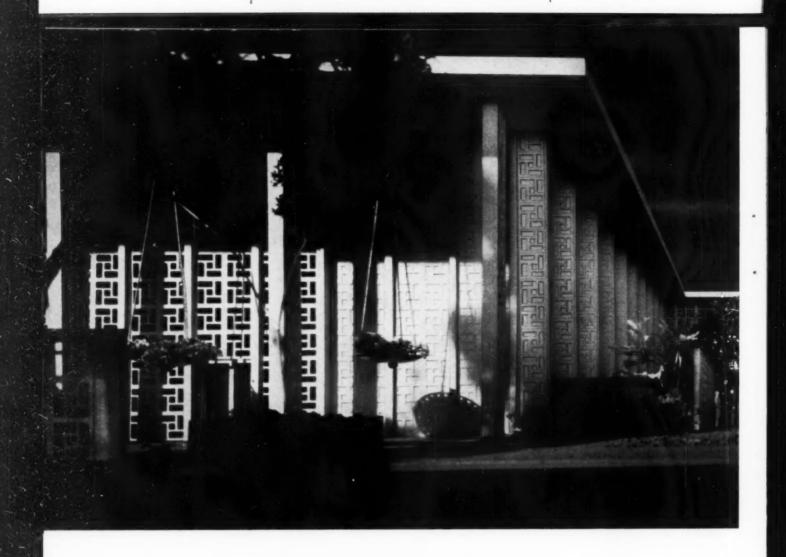
### HORIZONTAL HOSPITAL FOR PALO ALTO

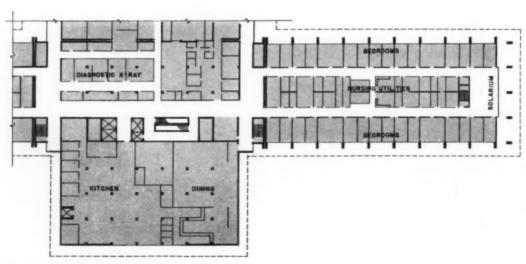


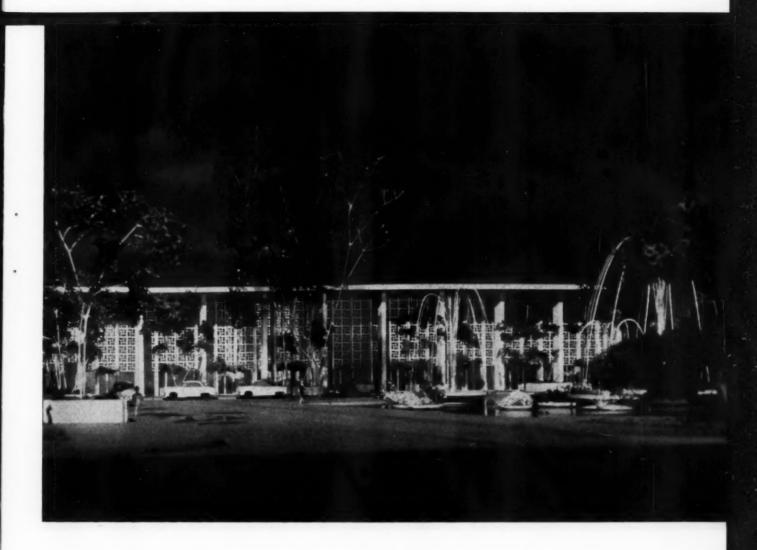
The sweeping colonnade shown above depicts the campus elevation as it will appear when a laboratory and research wing is added in the central back court. Occupying 56 acres of the Stanford Cam-

pus, the rythmical patterns of the building are an echo of the arcades and courts of existing structures. Plan at left shows middle connecting unit (see inset plan) for clinics and administration. At right is the rehabilitation center plan, occupying the front, right wing. It is an experimental unit with social, vocational, psychological and medical rehabilitation facilities; physical therapy facilities on second floor are also for inpatients. The wings are part of Stanford Medical School







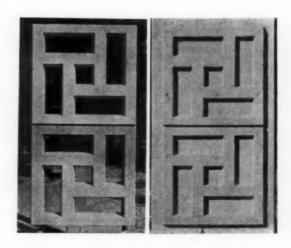


### HORIZONTAL HOSPITAL FOR PALO ALTO

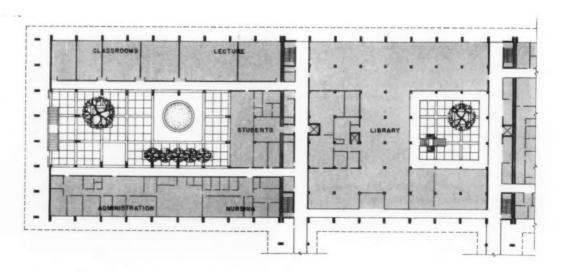


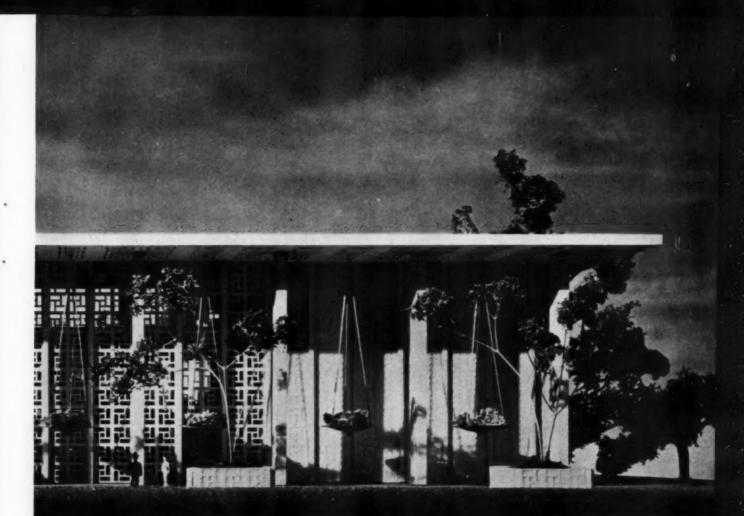
The main entrance of the medical center (above) has large motor court, pool, fountains. Details of 44-inch concrete blocks used for facing and grills are shown at right. The plan is of the main floor of the

225 bed Palo Allo hospital (a voluntary community facility) and of the medical and service core linking it with the Stanford hospital (which has teaching facilities). Hospital floors are similar, with service down the center. The second floor of the core houses surgery and related labs; the third floor has obstetrics and pediatrics. The basement under these wings houses emergency suite, records, supplies, etc. All central-core floors are connected by escalator.









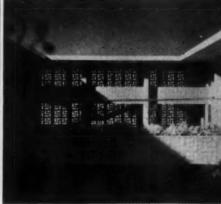
### HORIZONTAL HOSPITAL FOR PALO ALTO

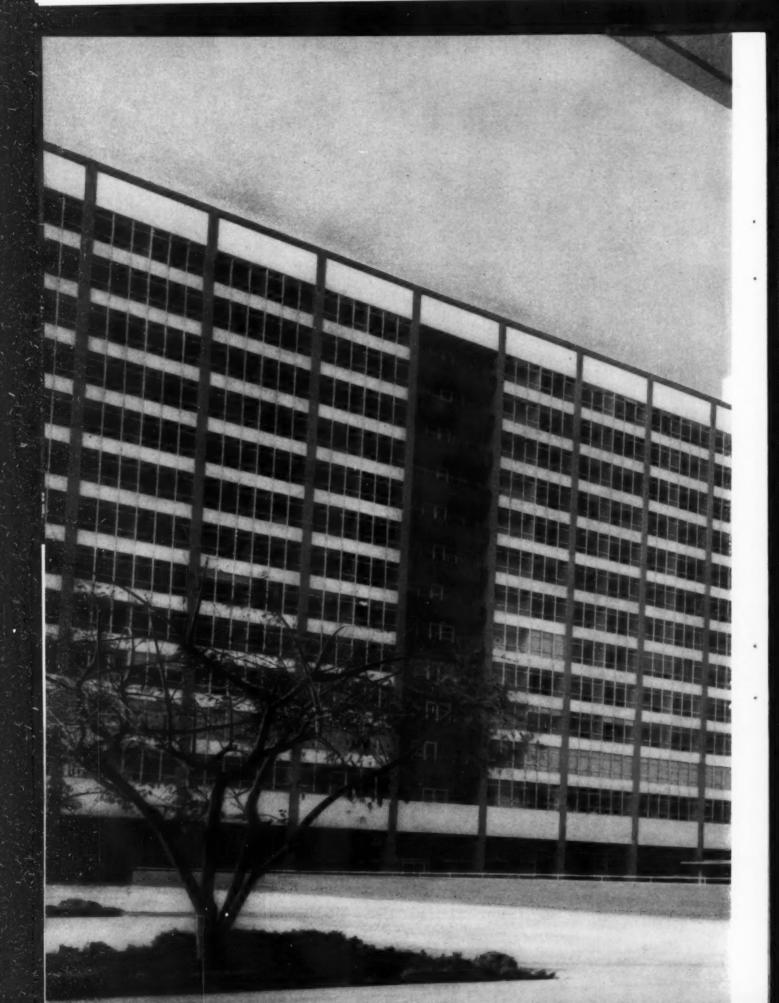


Behind the rehabilitation center (above), and on its third floor, are the facilities for the Stanford University medical school. The plan shows ground floor classrooms and library. On the second floor

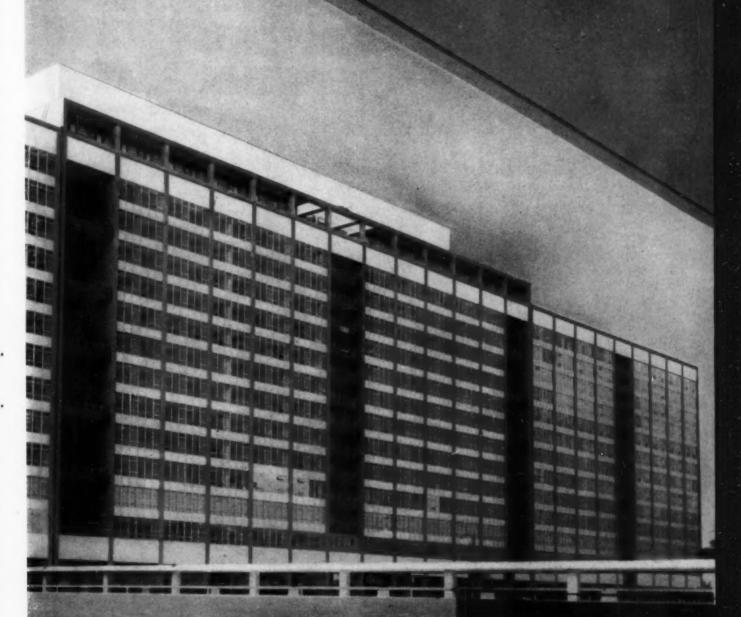
are pathology and student labs. On the third floor are facilities for physiology, biochemistry and pharmacology. The entire medical center is planned on a regular 22-foot bay spacing. The great profusion of altractively planted courts throughout the building (note detail pholos at right) flood all areas with light. When the building is expanded in the future, new courts would be placed between new and old units to avoid interference with existing fenestration and room layouts.

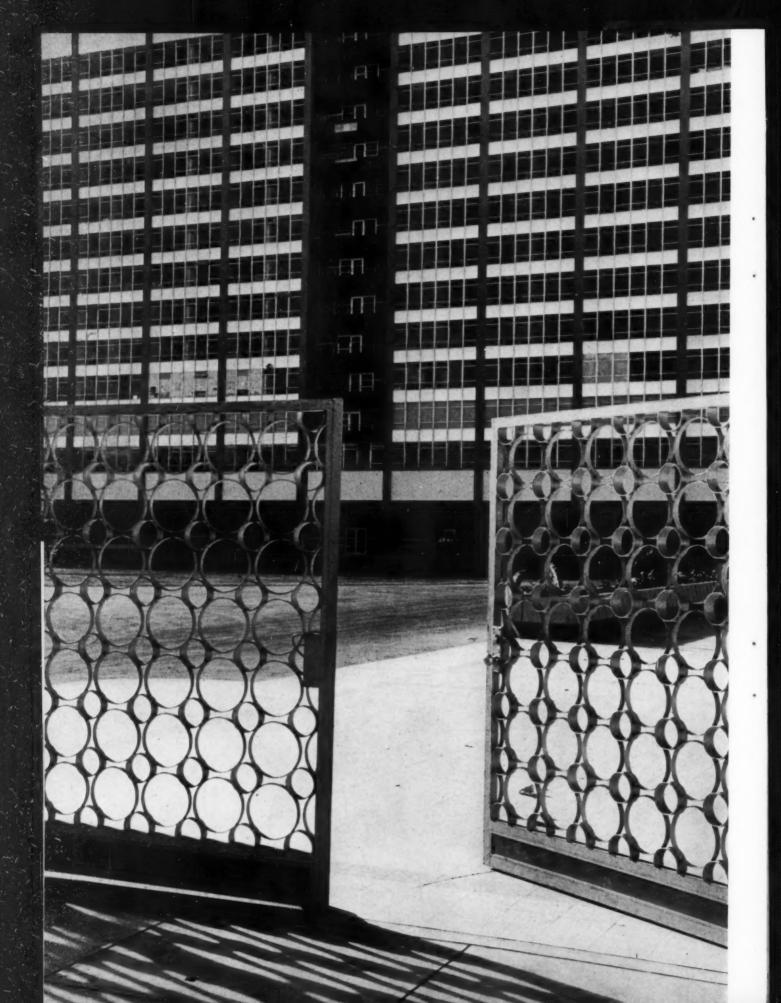


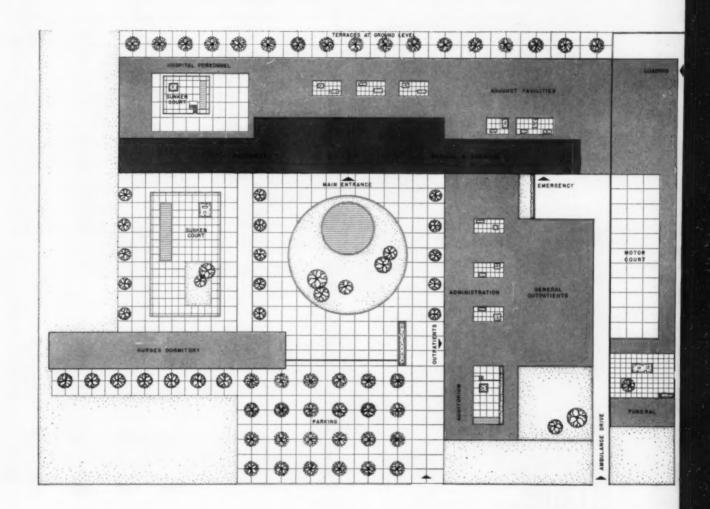




A VERTICAL HOSPITAL FOR LIMA, PERU

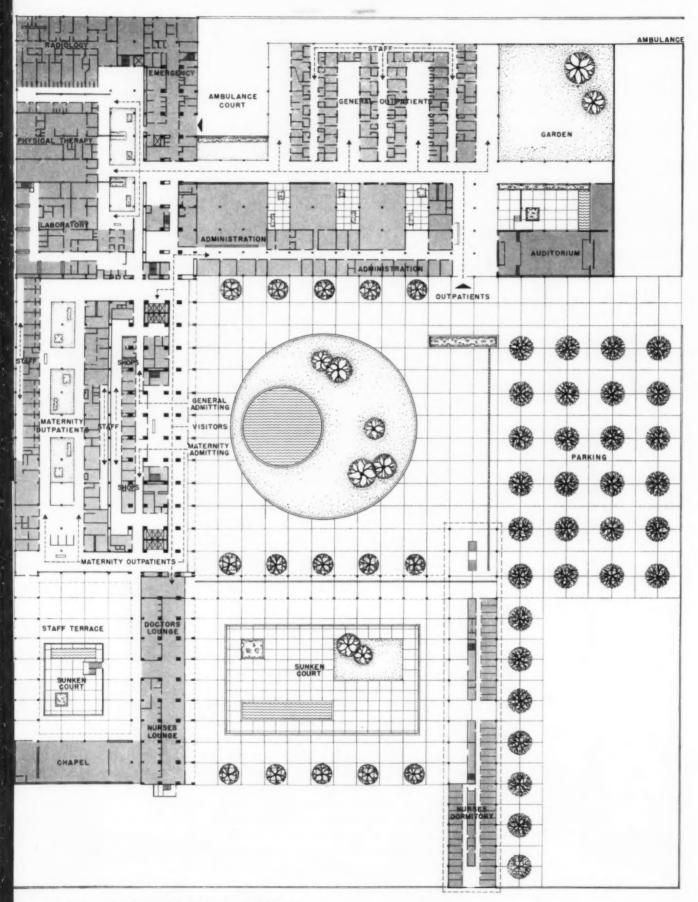






### VERTICAL HOSPITAL FOR LIMA, PERU

This enormous, vertical hospital by Edward D. Stone and A. L. Aydelott, Associated Architects, planned some six years ago, contrasts sharply with the preceding new Palo Alto scheme. Yet for its particular requirements for custom, climate and social institutions, it works equally well. Called the Central Hospital of Social Security for Employees (S.S.E.), the Lima institution will serve as the base unit in a nationwide, coordinated hospital system. Specifically, the new hospital is a dual one, providing medical and surgical care for Lima's white collar workers under Peru's social security plan, and maternity care for their wives. The idiom of patterned grills and pleasant courts is to some degree still present, but on a monumental scale — this is reportedly one of the larger reinforced concrete buildings in the world. There is a total bed capacity of 850; 500 in the general hospital, 350 in the maternity section. Outpatient clinics for each section have the respective capacities of 630 and 589 per day. Perhaps the most remarkable thing about such a big complex institution is the forthright simplicity that has been achieved in plan, structure and design.

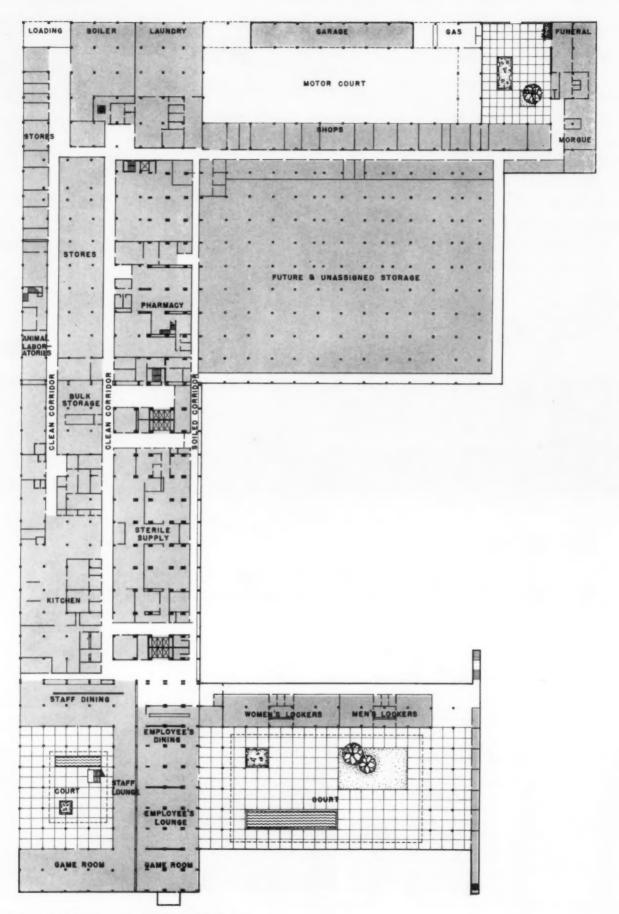




### VERTICAL HOSPITAL FOR LIMA, PERU

Circulation is exceptionally well handled in this huge hospital. Basically, the institution is divided into two separate, distinct hospitals (maternity and general), but lower floors contain facilities available to both. From the main entrance (above) a central lobby branches to elevator cores for each of the two hospitals. Maternity outpatient traffic is confined to the ground floor of the central wing, general outpatients to the east wing. Separate staff corridors have back doors to examining rooms. The basement serves all with kitchen, laundry, supply.

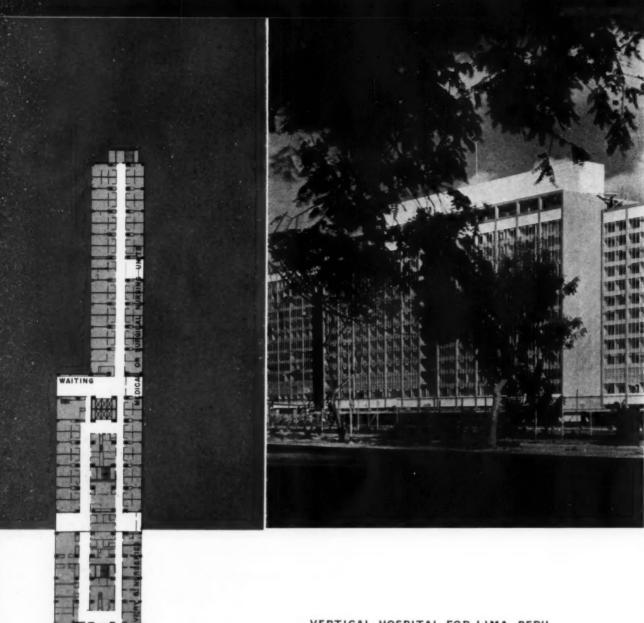






VERTICAL HOSPITAL FOR LIMA, PERU





### VERTICAL HOSPITAL FOR LIMA PERU

Nursing floors are divided down the middle from the top of the hospital to the third floor. Each side is served by its own elevators. Each room, with the exception of a few on the psychiatric floor, has a private bath. All rooms facing south are single, and measure 10 by 12 feet. Most rooms facing north measure 12 by 16 feet, and can be used as double rooms. Delivery rooms are dispersed to permit local custom of family gatherings.

The Central Hospital of Social Security for Employes (S.S.E.) was planned and built during the administration of General Maneul A. Odria, President of the Republic of Peru. The plans were developed in cooperation with U. S. Public Health Service, Divisions of Hospital Facilities and Medical and Hospital Resources; the late Marshall Shaffer, Chief of the Technical Services Branch, U.S.P.H.S., was especially interested in this project and made a great contribution.



BANGKOK, THAILAND; Embassy Office Building; John Carl Warnecke, Architect. Water in the "klongs," reflecting colorful local architecture, plus heavy rainfall conditions, inspired a delicate, lacy building with wide protective balconies, reflected in a miniature lake

## AMERICAN ARCHITECTURE DESIGNED FOR EXPORT

Since the Department of State began its current program of foreign buildings, something like three years ago, some important break-throughs have been registered. For here the call is clear: architecture is to speak to people, vast numbers of people in far-off places, of vastly differing experiences and persuasions. It is to speak to them of the United States of America.

The thoughtful way the FBO has set out to organize its visual messages is refreshing. Its advisory panel of famous architects, helping select architects of individual buildings and advising with them, represents reaching new ground in this age-old type of communication. The conscious charge by the State Department to the participating architects, written early in the program by Pietro Belluschi, was significant:

"To the sensitive and imaginative designer it will be an invitation to give serious study of local conditions of climate and site, to understand and sympathize with local customs and people, and to grasp the historial meaning of the particular environment in which the new buildings must be set. He will do so with a free mind without being dictated by obsolete or sterile formulae or cliches, be they old or new; he will avoid being either bizarre or fashionable, yet he will not fear using new techniques or new materials should these constitute real advance in architectural thinking.

"It is hoped that the selected architects will think of style not in its narrower meaning but as a quality to be imparted to the building, a quality reflecting deep understanding of conditions and people. His directness and freshness of approach will thus have a distinguishable American flavor."

The panel has been careful not to impose its own interpretations on individual architects doing specific projects. Thus the designs presented here (and in the two groups previously shown) represent considerable variety. Clearly all designs would not earn universal approbation. Even so the freedom must be considered good; freedom was an early American break-through.

With an advisory panel to guide it, the Department has patently refused to assert its own competence in matters of design. And, bless us, isn't this an important break-through? And it has undoubtedly achieved the best possible answer to uninformed criticism that seems the lot of government bureaus.

Results surely represent an excursion into new territory. The panel has been the means of introducing into government, notoriously tradition-bound, some of the most enterprising of architectural break-throughers. At the same time it has adjured architects to lay aside their more egocentric preoccupations, to align their purposes with those of this terribly important communication.

This approach to regionalism, to style, to a focussed architectural objective, might be opening up a great break-through for contemporary architectural effort



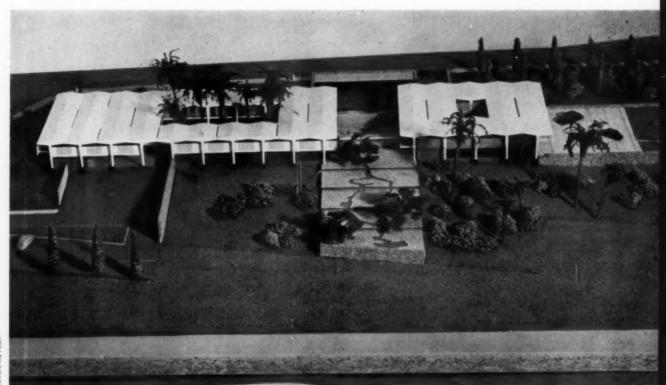
SANTIAGO, CHILE; Ambassador's Residence; Paul Thiry, Architect. Sitting with stately grace atop its rather high hill, the building seems to have a congenial feeling for its site, seems likely to engender a sympathetic response. Reinforced concrete will fit local usage



LIMA, PERU; Embassy Office Building; Keyes & Lethbridge, Architects. Having no serious weather problems, the building makes much use of open tile screens; their burnt orange color sets a warm scheme, carried on with sepia mahogany doors and beige travertine



TEHERAN, IRAN; Ambassador's Residence; Victorine & Samuel Homsey, Architects. Site was once a private estate; it has a well developed garden already, with jube (water trough) through which a brook is directed. Reinforced concrete structure, travertine facing



RABAT, MOROCCO; Embassy Office Building and Residence; Kelchum, Giná & Sharp, Architects. The emphasis here was on making the Embassy inviting rather than imposing; main entrance is in patio. Local practice determined choice of reinforced concrete construction



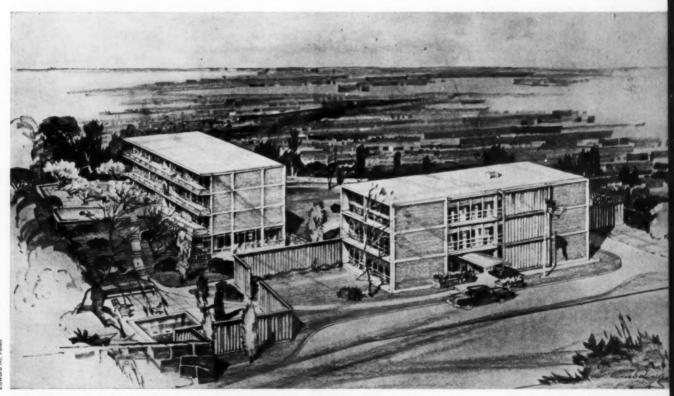
CIUDAD TRUJILLO, DOMINICAN REPUBLIC; Embassy Building; Rogers, Taliaferro & Lamb, Architects. This addition follows local tradition with its enclosed court. Strong sunlight suggested the pierced screen wall; lush greenery suggested it be white



DAKAR, FRENCH WEST AFRICA; Consul General's Residence; Moore & Hulchins, Architects. Designed for a tropical climate, the building makes features of protection devices. Balconies and roof overhangs permit the large windows to be open during rainstorms



ATHENS, GREECE; Embassy Office Building; The Architects Collaborative, Architects. Here Walter Gropius has the role of the old master returning to the land of old masters, to show what changes the centuries have wrought in a building for essentially an old problem



NAGOYA, JAPAN; Office Building and Staff Quarters; Alexander Smith Cochran, Architect. Security was desired, but "western compound" to be avoided. Building exposes its earthquake-resistant concrete structure. Sun protection east and west by wood lowers



TANGIER, MOROCCO; Consulate General and Residence; Hugh Stubbins Associates, Architects. A new and smaller version of an earlier scheme, the design retains the pierced masonry sun screens, the barrel roofs, the strong, unifying walls, the sense of technology-not-forgetting-well being



MANILA, THE PHILIPPINES; Staff Apartments; Alden B. Dow, Architect. The ubiquitous American carport, attached to individual apartment units, joins with other shade devices to establish a unifying motif and establish a note of shelter and composure in a very hot climate



BASRA, IRAQ; Office Building and Staff Housing; Harris Armstrong, Architect. This consulate group will front on the Shat-el-Arab River, near the Persian Gulf. Office building has shade walls of teak wood grills. All buildings are air conditioned, for temperatures that go as high as 120 degrees



MANILA, THE PHILIPPINES; Regional Production Center Building (printing plant); Sherlock, Smith & Adams, Architects and Engineers. A slick, efficient-looking industrial building, to be built in two stages, softened by pleasant interior court and some local stone in exterior facing

Mexico City's

## EARTHQUAKE



Early reports of damage to buildings caused by the July 28 earth-quake were both sketchy and misleading; an architect or engineer could hardly have surmised what happened, or did not happen, to the sleek office buildings and hotels, to the buildings in University City, and to some of the familiar landmarks. It was said, for example, that the Continental Hilton had a bad crack in its side. Actually this was a ruptured construction joint — not in itself an indication of structural failure.

On the following five pages are photographs of typical damage, and notes obtained from interviews with Mexican and American engineers during a brief visit to Mexico City a week after the earthquake.

First appearances were deceiving, since the ride from the airport into the city revealed no obvious damage, and a quick look around upon arrival showed not much more than a few broken windows and cracked facings. A strong hint that damage might be more severe than it first seemed was given by a 5-story, steel and concrete columned, flat slab building under construction which looked like it might have been bombed.

Closer inspection told more about the effects of the 'quake, estimated to have been between 7 and 8 on the Mercalli scale. (Sometimes natural frequencies of buildings were the same as the earthquake period—a resonant effect resulted.) Damage included broken windows and spalled facings; cracked plaster and broken walls; buckled steel columns; fractured concrete beams; severe settlements and buildings jarred out of plumb; and opened construction joints.

Several large downtown office buildings must be scrapped because either they are too expensive to rehabilitate or unsafe. One of these, Reforma 1, is shown here with tell-tale cracks in the pilasters.

The colorful, striking buildings















Numbers on map correspond to numbers under photographs

at University City appeared untroubled by the earthquake, but it is probable the shock was much less severe there. The small cosmic ray laboratory of Candela stands undamaged along with other buildings on stilts at University City.

A Mexican engineer said that four movie theaters collapsed, as well as about four other buildings up to seven stories. One of the theaters showed films the day following the 'quake, and that night after it was empty, the theater collapsed - presumably the structure could take the live load, but not the temperature stresses.

It was obvious in the collapsed buildings that scant attention had been paid to lateral resistance, including connection details. In one concrete structure, seven floors pancaked, indicating that it probably had barely enough strength to take normal dead and live loads.

Dynamically designed buildings came through the shocks in fine shape. The 43-story tower, La Latino-Americana escaped undamaged. Displacement measured at the 25th floor was 1.5 cm.

Much of the damage occurred to buildings with foundations on soft ground. Earthquake loads are difficult to anticipate even for ideal soil conditions such as rock. But in Mexico City, built over dried up lakes and canals, spongy clay, alluvial and archeological deposits, the problem is extremely complex.

- ROBERT E. FISCHER







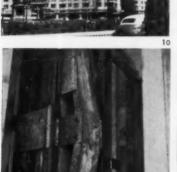






















Owners and engineers of the Latino-Americana 43-story skyscraper (1) were proud of the fact that the tallest building in Mexico escaped unharmed. The Palace of Fine Arts (2) which has been sinking for some time came through without trouble. Famed Del Prado Hotel (3) had slight damage which was not obvious from outside. A familiar landmark (5), Reforma 1, 17-story concrete structure, unscathed in the last earthquake, has severe structural damage now; this plus earlier foundation problems, makes it impractical to save; note the toppled antenna. Another office building, this time a 14-story steel structure (4) at Juarez 90, must come down also. At Reforma 35, marble facing fell off a 14-story concrete structure (6) when it banged against building to left. New concrete frame, enclosed in glass and blue aluminum (13) lost several panes of glass. Morelos 110, 13 floors, concrete (8), suffered severe damage to glass and interior walls.

Next to it, Reforma y Versalles (7), steel frame of 18 stories, designed according to dynamic theory, successfully withstood the shake. Columns on the 2nd and 3rd floors of Apartments Latino-Americana buckled (10). This was said to have minimized damage to upper stories since shock was not transmitted after buckling occurred. Frame will be strengthened by adding additional steel at the columns. Shear walls will be built along exterior. Reforma 69, 20-story steel structure (9), settled 4 in.; front facing cracked. Dynamic design aided Reforma 51, a 25-story steel building (12) - no damage. Spectacular failure downtown was building for Banco Nacional (11), of "hollow slab" construction; no beams; light exterior steel columns, concrete interior columns. U.S. embassy (14) had considerable damage on 15th and 16th floors. Cantilevered slab building (15) lost all glass, permanently fastened.



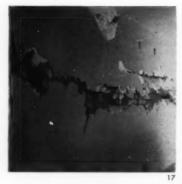




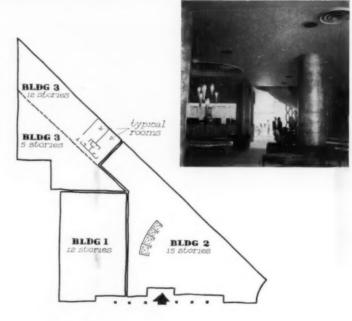




While the exterior of the Continental Hilton (17), except for broken glass in the back, does not appear damaged, and the dining room and lobby on the ground floor are unscarred, only 40 per cent of the guest rooms can be occupied until after extensive rehabilitation. The hotel is comprised of three structures, separated by 12-in. construction joints, with floor slabs extending 6 in. into the cavity. During the quake, the buildings banged together. Building No. 2, which suffered most damage, apparently whipped around the elevator core, according to Murray Erick, Los Angeles engineer and consultant to the hotel. There are diagonal tension cracks in short beams over the room entrance halls and broken partitions. (There is a smaller crack in the beam, invisible in the photo, identical to the one that can be seen, running in the opposite direction from top to bottom indicating that racking motion took place in both directions.)











A doctors' office building (19), out of plumb and sunken almost a foot below street level, is beyond repair. Only visible exterior damage to the Plaza Hotel (16) was opening of construction joint; there appeared to be no damage to the circular staircase. Probably having only enough strength for normal dead and live loads, a new seven-story concrete structure (18) at Insurgentes 377 "pancaked" to destruction. At the Instituto Politechnico (22) a several-storied concrete building collapsed. Reported in the newspapers was the fact that the angel toppled off Independence Monument (20); the column was badly cracked. At Reforma 208, the top two floors of an unfinished 16-story concrete structure (21) were shaken down. Similar damage occured to several other tall buildings in Mexico City and to two penthouses atop a 12-story concrete building in Acapulco, scheduled to be a hotel for the Hilton chain.







22 Adolfo Zeevaert







# EARTHQUAKE FORCES AND DESIGN PRINCIPLES

By Edward Cohen, Associate, Ammann & Whitney Consulting Engineers

Thousands of earthquakes are recorded at seismological stations every year. Potentially destructive earthquakes occur on the average of twice a week. Fortunately, most of the activity occurs in well defined earthquake belts. It has been estimated that the greatest earthquakes release energies equivalent to almost 1,000,000 Hiroshima type atomic bombs or 1000 large (20 megatom) thermonuclear bombs. The energy involved in the recent Mexico City earthquake is estimated as approximately equal to that in the explosion of a single two megaton nuclear weapon.

Major earthquakes are believed to occur as a result of the sudden release at faults of strains and stresses developed in the earth's crust over long periods of time. This is known as the elastic rebound theory and is generally accepted as a workable explanation of the mechanism involved in earthquakes.

Although no complete explanation is available, current theories which are advanced to explain the development of these forces include shrinkage of the earth's crust, mountain building, and isostatic compensation. The last assumes that the earth's crust consists of many large solid blocks which are supported by uniform pressure which exists toward the liquid core of the earth. As material is eroded from one block and deposited on another, the first tends to rise and the second to sink. The motion does not occur continuously, but in erratic jolts when the unbalance has become sufficient to break the bond between the blocks. These explanations are consistent with the location of the major earthquake belts along mountain ranges and ocean troughs. Since early times volcanic action has been suggested as a basic cause of earthquakes. Although there may be some common factors involved, it is doubtful whether volcanic action causes earthquakes other than those of a local character associated with erup-

Although practically no region of the world can be considered safe from earthquakes, there are certain earthquake "belts" where destructive earthquakes are most frequent. One belt extends from west of the Mediterranean eastward through northern India and China to the Pacific, around the borders of the Pa-

cific, northward from New Zealand and the East Indies through the Philippines and Japan to Alaska, and southward along the western and coastal regions of North and South America. It also reaches across Mexico and Central America to the West Indies although little activity has ever been noted in the Bahama Islands. Another belt extends north-south almost from pole to pole through the mid-Atlantic.

While it is well known that our West Coast is subject to relatively frequent earthquakes of a destructive nature, it is not so well known that major earthquakes have occurred throughout the United States. The most famous earthquake of colonial times occurred in 1663 in the St. Lawrence valley and was felt throughout New England. In 1755 a severe earthquake caused extensive damage in Boston, Mass. In 1811 a great earthquake occurred at New Madrid. Missouri. One of the greatest earthquakes in the United States took place in Charleston, South Carolina in 1886. In 1904 an earthquake of about the same magnitude as the famous San Francisco quake of 1906 occurred on the East Coast near the Canadian border. Other important earthquakes have taken place throughout the country.

A map showing major earthquakes in the United States through 1946 is shown on following page.

In general there are two methods for defining earthquake magnitudes. The first is based on the visual observation of damage and the second by estimating the total energy (ergs, foot pounds, kilowatt hours, etc.) released by the earthquake

In the United States the Rossi-Forel and the Modified Mercalli scales are used for determining earthquake magnitude based on direct human observations of damage and motion.

Modified Mercalli Intensity Scale, Wood and Neumann 1931 (abridged)

- Not felt except by a very few under especially favorable circumstances (I Rossi-Forel Scale).
- 2. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing. (I to II Rossi-Forel Scale).



Destructive and near destructive earthquakes through 1946

Ifrom ASCE Transactions, vol. 117, 19521

- Felt quite noticeably indoors, especially on upper floors of buildings. Vibration like passing truck. Duration estimated. (III Rossi-Forel Scale).
- 4. During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make a creaking sound (IV to V Rossi-Forel Scale).
- 5. Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. (V to VI Rossi-Forel Scale).
- Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight. (VI to VII Rossi-Forel Scale).
- 7. Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures, some chimneys broken.
- 8. Damage slight in specially designed structures; considerable in ordinary substantial buildings with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. (VIII+ to IX Rossi-Forel Scale).
- 9. Damage considerable in specially designed structures; well designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken. (IX+ Rossi-Forel Scale).
- 10. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks. (X

- Rossi-Forel Scale; this is top of scale).

  11. Few, if any (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
- 12. Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.
- In the Guttenberg-Richter energy system which is more useful for certain scientific purposes the relationship between the energy, E, and the magnitude, M, is given by

 $M = 0.56 \log_{10} (E/E.)$ 

where Eo is the energy release of a zero magnitude shock =  $2 \times 10^{11}$  ergs. On this scale the greatest earthquakes have a magnitude of 8.5.

However, the shock magnitude does not indicate "the intensity, violence or strength of the shock, either at epicenter or elsewhere but (only) its total size or output of energy."

Design for earthquakes is similar in some respects to design for wind and nuclear weapon blast forces, and in other respects completely different.

In all three cases, strength against lateral loads is required. For wind and blast the loading is determined by the exposed area; for earthquake it is independent of exposed area. For both earthquake and blast, the dynamic properties (mass, stiffness) determine the response (maximum stresses and damage) of the structure, whereas wind on buildings may be treated as a static problem except in special cases. For blast resistance increased mass is desirable and damping is unimportant; for earthquake resistance increased mass is objectionable and damping is an important, favorable factor. However, in the case of earthquakes the increase in load is not proportional to increase in height, whereas wind load increases faster than the height. In the case of earthquake design, the loads are

affected by the type and compaction of the foundation material, more damage being expected the softer the ground.

In all three cases vertical loading is present but in the case of wind and earthquake it is generally much less critical because most structures have excess strength in this direction provided by the factor of safety on normal dead and live vertical loads.

Review of earthquake damage leads to some general observations:

The firmer the foundation the less the damage, rock being the ideal foundation.

The stresses in flexible buildings on firm material are generally lower than in rigid structures, but the displacements are greater. Partitions, windows, etc., must have clearance to allow movement or rehabilitation will be expensive even though the building suffers no structural damage.

Buildings having a natural frequency close to the apparent earthquake period will be more severely stressed than if the periods were different. Thus flexible (long period) rigid frame type structures would appear to be most suitable for rock foundations while stiff (shear wall) buildings would be best for soft soils. Structures of ductile structural materials are least likely to collapse. Thus reinforced brick is suitable to asseismic structures while plain brick is not.

A symmetrical building (a cube, for example) with the center of gravity of bracing at the center of gravity of the mass can be made earthquake resistant more easily than an unsymmetrical layout.

Providing rigid connections among all foundations is helpful in reducing damage in soft material by minimizing relative settlements and motions.

Shear wall construction of reinforced concrete or reinforced brick provides high strength and stiffness.

Unreinforced bearing wall structures are highly susceptible to collapse.

Light box type wood frame houses may be made highly earthquake resistant by proper attention to the details which tie the structure together into a unit.

Chimneys and parapets are most subject to damage unless specifically designed for earthquake resistance.

Curtain walls should be well anchored to the structural frame.

Tall buildings close together may cause considerable damage by banging against each other.

The safest place during an earthquake is in an open field.

(Continued on page 254)

### MEXICO CITY'S 'QUAKE-PROOF SKYSCRAPER

By Adolfo Zeevaert, C. E.

Chief Engineer, La Latino-Americana, Seguros de Vida, S. A.

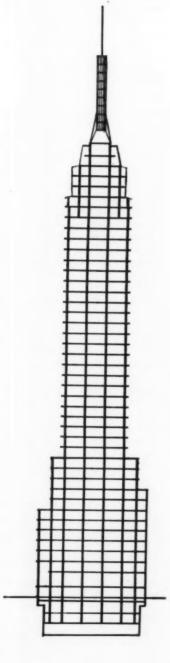
SINCE ITS FOUNDING by the Aztecs in the 14th century, Mexico City has grown to a metropolis of some four million inhabitants, its population multiplying more than ten times since the turn of the century. Such growth has brought an important increase in all kinds of business, but, from the engineering point of view, it has created serious problems.

In addition to the usual problems of traffic, transportation and water supply, the city area is subject to a ground surface subsidence of about two feet per year. And because Mexico City is in an active volcanic zone, it is menaced by strong earthquakes as well. When La Latino Americana, Seguros de Vida, S. A., first decided to construct a much larger building for its home office, the company's engineers presented a project for the new building which consisted of one basement and 27 stories. Some time later this project was reviewed, and, in view of the fact that La Latino Americana wished to have the tallest building in Mexico City's strong volcanic and earthquake zone, a thorough study was undertaken of all the conditions that would be imposed by the new project of the building. From subsoil studies, in conjunction with architectural considerations, it was found that a tall building could be designed, provided it was built with light materials. La Latino Americana then conceived the idea of constructing a 43-story building with three basements, using the lightest and most modern materials available in Mexico City.

In order to go through with such an undertaking, it was necessary first of all to study carefully the ground surface subsidence caused by the continuous pumping of water from deep wells drilled within the city area. This factor has caused serious problems in foundations of buildings, and failure in many cases of improper design. To study the problems of foundation, structural and architectural design, La Latino Americana called in Dr. Leonardo Zeevaert as consulting engineer in soil mechanics and structures; Dr. M. N. Newmark as



Recent quakes were "proof of the pudding" for aseismic design of Mexico City's lone skyscraper, the 43-story Tower Latino Americana (above)





TOWER LATINO AMERICANA



Superstructure for the Tower Latino Americana "floats" in a waterlight concrete box supported on button-bottom piles. Steel framing starts in the second of three basement levels, is fixed to foundation structure below. Ground floor slab rests on concrete blocks supported by a steel structure 4 ft below present street level, can be lowered as sidewalk settles



consulting engineer in the aseismic design; and Augusto H. Alvarez as consulting architect for the general architectural design. The principal problems to be solved were the selection of light materials for the construction of the 43-story Tower Latino Americana, the development of a foundation design to take care of the above mentioned problem of subsidence of the city—and, furthermore the problem of the vibration of the structure during earth-quakes.

The building, which is located on an almost square site (109 ft on Madero Avenue and 123 ft on San Juan de Latran Avenue), has three basements. including the foundation structure, and covers the total site area of 13,500 sq. ft. Two of the basement levels are used for machinery, water supply pumps, boilers and air conditioners, while the first basement and lobby house commercial spaces. A bank occupies the second and third floors. Offices are located on thirty-three typical floors; five floors are given over to a night club and restaurant; and the 42nd, 43rd and roof floors are reserved for an observatory. In addition, a television tower was constructed, giving a total height of 597 ft from street level, and 254,000 sq ft of rental area.

A boring to a depth of 230 ft was made in order to obtain undisturbed samples of the subsoil to learn the mechanical properties. The report by Dr. Leonardo Zeevaert established the fact that a total weight of 25,000 metric tons could be safely applied at the site in question, using a special compensated point bearing pile foundation design.

The first step was to excavate the total area to a depth of 10 feet, removing all the old foundations encountered to depths of 15 ft. Three hundred and sixty one concrete piles of the button-bottom type were driven to a compact sand layer 117 feet below the street level. The piles were driven to a minimum of 10 blows per inch with a single acting hammer with a point bearing 17 inches in diameter. Three loading tests



Floors are stiffened by steel shear connectors which assure composite action between girders, and concrete slabs; cross bars welded to the columns resist diagonal tension. The steel frame is stiffened at the connections. Displacements between floors are measured by recorders (below) at the first, 25th and 39th floors







### TOWER LATINO AMERICANA



were made on different piles up to a load of 120 metric tons, giving an elastic deformation for 90 metric tons. The length of the piles did not vary more than one and a half foot from the longest to the shortest pile but from one pile to the next this difference was only on the order of one inch.

The computed working load in the worst condition - that is, without any water uplift pressure and during a heavy earthquake - will be 60 metric tons per pile. Under normal conditions the working load will be only 35 tons per pile. Because the water level is four feet below the sidewalk it was necessary to drive a wood sheet pile 52 ft long all around in order to protect the buildings nearby and to perform the excavation. The hydraulic system consisted of four wells inside the cofferdam formed by the wood sheet-pile. During the excavation, the water was drained with these wells and the same water was injected again into the soil around the working area by means of eight injection wells. This practice proved necessary to prevent upheaval in the excavation as well as settlement in the outside area of the cofferdam occupied by the buildings nearby.

After the hydraulic system was achieved, deep excavation and bracing of the wood sheet pile started. Some of the piles were used as supports for the long 112 ft bracing that covered the entire area of the excavation until a depth of 25 feet in the total area was obtained. From there on, the excavation was performed in trenches to place the concrete beams of the foundation. After the beams were poured, the panels between them were excavated and the foundation slab was poured to hold the water pressure and the pile reactions.

The foundation was designed as a grid of concrete beams supporting the columns. The total load of the building was made to correspond with the resultant of the pile distribution and with the center of gravity of the foundation area.

The water pressure on the foundation represents 54 per cent of the total

weight of the building. The volume of concrete used was 3570 cubic yards. The beams were as large as four feet wide by 12 feet deep and the reinforcement up to 110 steel bars of 1½ inches diameter. To assure a perfect water uplift pressure, the concrete foundation was made water-tight.

The superstructure is designed as a steel frame to take the horizontal forces due to the wind pressure and earthquakes. The aseismic design showed the real stresses in the structure during an earthquake and the deflections possible between the different floors without any damage in the steel structure, slabs, walls or windows. The steel structure started in the second basement and was fixed to the foundation structure. Considering that the settlement of the building on piles would be definitely less than that of the sidewalk, the designers left the ground floor steel structure four feet below the street level. The precast concrete slab floor at this level is supported on concrete blocks in order to allow adjustment to follow the settlement of the sidewalk.

In this way it was assured that the commercial areas would always be at the same level as the sidewalk. The four foot clearance is expected to eliminate for the next thirty years the necessity of making steps into the building, as is usually required for other buildings on piles.

All the concrete slab floors are connected to the steel structure by steel shear connectors, to make them work as a unit during an earthquake and to obtain more rigidity in the building against large deformations. The slabs were provided with cross bars for diagonal tension to take care of the earthquake forces induced in them.

In order to prevent possible damage of the partition walls and glass windows because of relative displacement between floors during a severe earthquake they follow a special design. The displacements between floors are measured by six recorders installed in the building at the first, 25th and 39th floors.

### REPORTS PRODUCT

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### PORTABLE PREFAB CLASSROOMS

SEVERAL SCHOOL DISTRICTS in Southern California are meeting the mushrooming demand for new school facilities with the help of a modular all-steel construction system that produces classrooms in record time - and at a saving of 10 per cent over conventional wood framing. Lightweight structural steel framing. steel roof decking and insulated wall panels are combined in basic structural units which, when bolted to a concrete slab, form permanent classroom buildings. However, because the classrooms are both light in weight and structurally separate, they can be easily relocated as the occasion arises.

Although the standard classroom unit is 28 ft wide by 32 ft long, an 8-ft module allows flexibility in the arrangement of doors and windows, and classroom lengths may be varied by four or eight feet with only minor changes in the framing system. Thus design flexibility is maintained in spite of the standardization which makes possible the low construction cost.



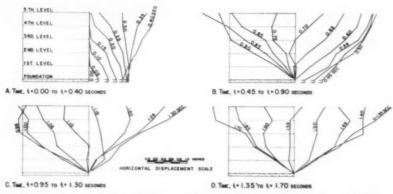


Prefabricated steel framing, roof decking and insulated panels are combined in modular all-steel classrooms that are low in cost, rapidly assembled (construction time: 90 days), and readily adapted to design modifications. Construction is permanent and durable; but because classrooms are built as separale, integral units. they can be easily lifted from their foundations and relocated as required

Basis for the modular system is a double wall panel made up of insulated inner and outer layers which combine to form a three inch wall equal in insulating value to a 12-in. masonry wall. The exterior surface is a heavy gage galvanized sheet with stiffeners at 16-in. centers, while the interior surface is a lighter gage sheet with interlocking joints at 32-in. centers. The two are joined by screws at the stiffeners. Acoustical and thermal insulation is provided by a 1/2-in. thickness of gypsum board attached to the interior sheet and a 1-in, blanket of Fiberglas attached to the exterior sheet. After assembly, the insulating materials become the core of a sandwich panel, with the exposed metal sheets forming the interior and exterior wall surfaces.

With this wall panel, only a light structural steel frame is required to carry the roof, which is a standing seam steel deck with interlocking ribs on 16in, centers and a 12-ft clear span. The finished ceiling is of Fiberglas acoustical board suspended from the decking. Sound absorption and thermal insulation are provided for by an air space ventilated by wall louvers and roof ventilators, and by a coating of aluminum asbestos on the topside of the roof.

Framing members, roof decking and wall panel components are all shop prefabricated, and can be rapidly assembled on the site. To insure correct dimensioning of the concrete slab and footings, and proper location of the anchor bolts, the concrete contractor is provided with steel channel templates when construction begins. After the slab has been poured and properly cured, the structural columns, door frames, roof beams and purlins are bolted into place, and the roof decking and exterior surfaces of the wall panels attached to the frame. At this point construction is halted while electrical, heating and plumbing work is done. When the conduit and piping have been placed within the wall panels where required, the interior panels are attached to complete the structure. Conduit and plumbing connections are exposed on the exterior of the building and the base molding around each unit is removable to provide access to the anchor bolt and column base connections. Steel Building Div., Calcor Corp., 1620 N. Spring St., Los Angeles 53, Calif.



This figure, from a paper by Whitney, Anderson and Salvadori, shows how a building might move during an earthquake. The theoretical building is 60 ft wide and has a period of 0.83 sec. Earthquake pulse (half-sine) is 0.6 sec, causing 1-in. foundation displacement

It is dangerous to classify the earthquake resistance of buildings according to their structural type without further description of their construction. Structural steel and reinforced concrete buildings can be highly earthquake resistant, but buildings of these materials may also be totally inadequate.

In order to study earthquakes for the purpose of analyzing and designing structures, it is desirable to have accurate records which indicate the actual intensities and types of ground motions in a way that does not depend on the personal reactions and general observations of often untrained observers.

Instruments used for recording and studying earthquakes are of two types, sensitive seismographs whose purpose it is to record weak ground motions and strong-motion seismographs which are activated only in the event of destructive or near destructive ground motions. The former are used to study the internal structure of the earth from the velocity of the waves traveling through the interior and to determine the location of the feci of the distant shocks thus helping to delineate the areas of seismic disturbance.

On September 19, 1957 the United States Atomic Energy Commission set off an underground atomic explosion at the Nevada Test Site which was recorded hundreds of miles away for scientific seismological purposes.

An unfortunate aspect of earthquakes is that strong motion records cannot be made until strong shocks occur in the immediate vicinity of the instruments. However, the information presently available has been sufficient to give a strong impetus to the rational design of aseismic structures. Many methods of analysis which treat the dynamic problem of a structure subjected to accelerations and displacements at the base have

been developed both for mathematical and experimental solution.

Unfortunately these methods are comparatively complicated and much design is still done on a rule-of-thumb static force basis. It is a credit to the engineering profession that, with such a crude tool, it has been able to raise the earthquake resistance of the most critical areas of this country to a reasonable level. The recently adopted San Francisco Building Code has attempted to simplify and codify the dynamic method of design and represents a great step forward.

The static force method ignores the elastic properties of the building. It assumes the building to be a completely rigid structure in which the acceleration of every point conforms to the acceleration of the ground. The theoretical lateral loads for design are then equal to the various masses of the building times the maximum grand acceleration. In practice the lateral design loads have been established on the basis of experience without any fixed relationship to expected ground accelerations. It can be seen that such methods are useful for structures within the range of experience and are of doubtful validity for new types. It is fortunate that the above static method is most reasonable for low rigid buildings of which many have been built. When tall and perhaps flexible buildings are being planned, the design criteria must be re-evaluated in terms of safety and minimum cost consistent with that safety

Dynamic analysis recognizes that buildings are elastic, not rigid, and that the ground motions are transients of various durations and directions. It indicates that the stresses and distortions in structures will vary as a function of the natural periods of the structure and the applied ground motions. Since the obvious purpose of aseismic design is to minimize damage or prevent collapse, design criteria for aseismic structures should be based on such considerations. Theoretical stresses computed from elastic analyses based on equivalent static loads derived for average conditions are often not representative of earth shock forces and in many cases may either be excessive or inadequate.

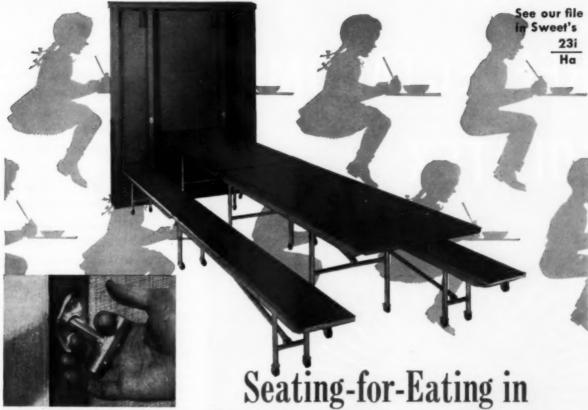
The use of allowable stresses reduced in accordance with a so-called "factor of safety" is deceptive because there is no linear relationship between "load" and stress. In 1952 the writer proposed that dynamic analysis be combined with plastic-limit design and that the factor of safety, or rather the strength, of aseismic structures be expressed in terms of the maximum intensity quake which they can sustain without (1) collapse or (2) without exceeding some limiting permanent distortion.

In earthquake resistant structures where economy and accuracy of design are dependent on having the strength and behavior match the requirements determined from a dynamic analysis, conventional methods of computing structural resistance are generally unsatisfactory because plastic deformations of substantial magnitude occur before failure. The computed strength of an earthquake resistant structure should be based on the full development of the ultimate moment or limit capacity at all critical sections.

Even on firm material, a structure will have a tendency to slide and rotate on its base and may often develop temporary instability. (The condition of temperary instability is one which is not serious but often causes confusion in arriving at equivalent static lateral load provisions which consider only the magnitude and not the durations of the maximum horizontal shears which are developed in the various stories.) This reduced fixity of the base has important effects on the magnitude and distribution of the shears in the structure.

The main problem with respect to low buildings is the prediction of earthquake frequencies and magnitudes as well as the variations in ground motion due to local soil types and stiffness. The other problems of earthquake design which are being investigated and discussed currently are those relating to tall buildings or flexible structures.

In this area the progress has accelerated greatly in the last two decades and it appears that adequate methods of design are available.



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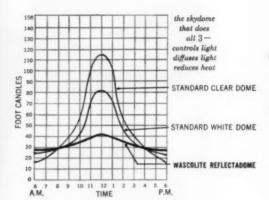
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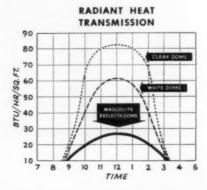
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### USEFUL CURVES AND CURVED SURFACES: 25-Construction of Spheres

By SEYMOUR HOWARD, Assistant Professor, Pratt Institute, Architect associated with Huson Jackson and Harold Edelman

Since the sphere is curved in two directions and cannot be developed, many methods have been used to build domes of this shape. These may be grouped under the headings of radial domes and geodesic domes.

1. Radial Domes. This is the most commonly used method and is based on the image of latitude and longitude circles. Curved ribs are built along the longitude circles, radiating from the top, with or without transverse ribs on the latitude lines. The lune or gore spaces between the ribs are filled with thinner vaulting or paneling. If the lune (see Sheet 22) is thought of as the unit, this method is adaptable for prefabrication; domes have been built with a minimum of formwork by first erecting two diametrically opposite lunes, forming an arch against which the others can be constructed. The only difficulty is to join the many ribs which converge at the top; this is solved by introducing a compression ring. The ring may be closed or open.

If the radial dome is constructed as a triangulated network, with one side of each triangle lying on a latitude line, this system has the inconvenience of presenting ever diminishing triangles as the latitude circles become smaller toward the top. The lamella dome is built on this principle, with the latitude ribs replaced by a membrane or by simple tension rods.

Essentially similar is the method of building by zones (see Sheet 22), particularly adapted to small vaults. All the stones in one zone can be cut alike, but those in the next higher zone must be different. If the blocks follow along some kind of a helical line, as in an igloo, every block would have to be different to make an accurate sphere. 2. Geodesic Domes. The so-called spherical geodesic dome consists of a network of framing members which make a more or less uniform pattern over the whole surface, particularly the truncated icosahedron and the snub dodecahedron. (See drawings of polyhedra, Sheet 26.) It could be built with curved members which would lie along geodesic curves and thus be a portion of a true sphere, but is usually built as a polyhedron with straight members which form the chords of geodesic arcs. The perimeter of the dome at the bottom usually presents an irregular, ragged line.

If one attempts to cover a sphere with such a network, certain basic principles must be observed. Since the triangle is the simplest polygon and also the only one which is rigid in itself, the network will usually consist of triangles. These form larger configurations, depending on how many triangles meet at a point or vertex.

If six equilateral triangles meet on a plane surface, they form a regular hexagon. This is impossible on a sphere because the sum of the angles must be less than 360° around the vertex. On the sphere, therefore, all the members cannot be of the same length and the hexagons formed cannot be regular. Even if the pattern is made up of irregular hexagons, no matter how distorted, it is impossible to cover a complete sphere with them. A minimum of 12 pentagons must be introduced in order to satisfy Euler's formula.

Euler's formula states that, in any convex polyhedron, the number of faces (F), the number of vertices (V) and the number of edges (E) are related:

$$F + V - 2 = E$$

This formula can be used to check a dome which is not a complete sphere by considering the open bottom as a single face or non-plane polygon, the number of whose sides equals the number of members along the perimeter of the framework of the dome.

The basic possibilities and limitations of this type of framework are given by studying all the regular and semi-regular polyhedra and their duals, remembering that polygonal faces can be subdivided. Their number is quite limited.

There are only five regular polyhedra, all of whose edges are the same length and all of whose faces are regular, identical polygons. Called the Platonic polyhedra, they can have a sphere inscribed within them touching each face in its center, or have a sphere circumscribed about them, passing through each vertex. These points of tangency or vertices are the only regular systems of points which are equidistant from each other on the surface of a sphere.

There are the 13 semi-regular polyhedra, called Archimedean. All edges are the same length and every face is a regular polygon, but all the faces are not identical. The

vertices are all congruent (identical) but not regular (the angles between pairs of edges are not all the same). These polyhedra can have a sphere circumscribed about them, passing through each vertex. Prisms and anti-prisms (see sheet 17 for drawings) also meet these conditions if the top and bottom polygons are regular and if the sides are squares in the case of the prisms and equilateral triangles in the case of the anti-prisms.

There are also the 13 duals of the Archimedean polyhedra. A polyhedra P2 is the dual of polyhedron P1 if the faces of P2 correspond to the vertices of P1. Thus, the actahedran is the dual of the cube, the icosahedron is the dual of the dodecahedron. The number of vertices and the number of faces are interchanged; the number of edges remains constant. The vertices of the Archimedean duals do not fall on a sphere. but a sphere tangent to every face at its center can be inscribed within each dual. Every face is identical but is not a regular polygon. Every vertex is regular but all vertices are not identical. (The duals of the prisms are called dipyramids, made of two pyramids placed base to base. The faces are all isosceles triangles. The duals of the antiprisms are called trapezohedra. The faces are kites, or auadrilaterals with adiacent pairs of sides of equal length.)

In order to keep strut lengths as short as possible and avoid buckling, and in order to provide complete triangulation for rigidity, the polygons forming the polyhedra can be subdivided into triangles, and all triangles can be further subdivided. If the members thus added are the same length as the others, the added vertex will not be on the sphere; if the added vertex is held on the sphere, the added members will have to be of a different length. Continuous membranes, plane or warped, may also be used to provide riaidity.

See Sheets 26 and 27 following for diagrams and schedules of the polyhedra. The index number lists the number of faces of the polygons meeting at a vertex (see sheet 18 for similar index numbering system). For the Archimedean duals the index number of the corresponding semi-regular polygon is used with the prefix V



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### USEFUL CURVES AND CURVED SURFACES: 26-Polyhedra

By SEYMOUR HOWARD, Assistant Professor, Pratt Institute, Architect associated with Huson Jackson and Harold Edelman

Drawings of the Polyhedra, shown in plan, with name of each, and the number of faces, vertices and edges of each.





Truncated Tetrahedron V E F<sub>3</sub> F<sub>4</sub>





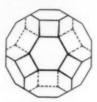
Truncated



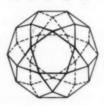
Snub Dodecahedron







Cuboctahedra



Icosidodecahedron F<sub>3</sub> F<sub>5</sub> V E 20 12 30 69





F V E



Truncated Octahedron F<sub>4</sub> F<sub>6</sub> 6 8





F<sub>3</sub> F<sub>4</sub> F<sub>5</sub> V E 20 30 12 60 120

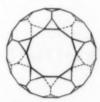


Projection









Dedecahedron F<sub>3</sub> F<sub>10</sub> V 20 12 60



Truncated Icosidodecahedron F4 F8 F10 V E' 30 20 12 120 180



Triacontahedron 30 32 60

F<sub>5</sub> V E 12 60 150

Flotes:

1. Only two of the Archimedean duals are shown. The rhombic dodescohedron is drawn in an oblique or axonometric projection, as well as in two plan views. Note it is a cube shown in fine dotted line, with a square pyramid added to each face. The

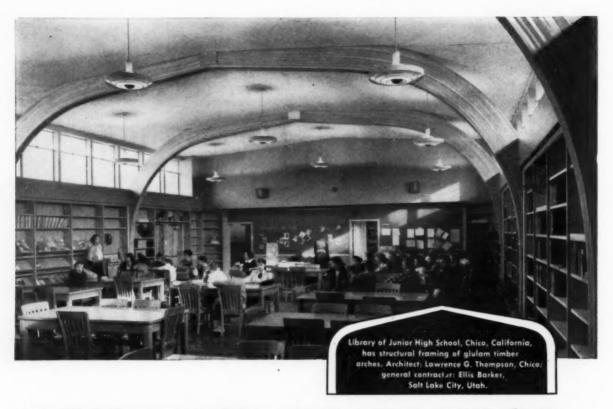
others can be drawn from the corresponding Archimedean polyhedron: (a) Draw plan with vertex in center; (b) Draw on plan the perpendicular bisector of each edge which meets at vertex; (c) Extend all bisectors until they intersect; they form irregular

Rhombic Dodecahedron

F V E 12 14 24

polygonal face of the dual.

2. For making models, polygons can be drawn on a fast sheet, with some edges of each polygon in common with adjacent polygons, making a continuous strip colled a net.



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### USEFUL CURVES AND CURVED SURFACES: 27 - Polyhedra

By SEYMOUR HOWARD, Assistant Professor, Pratt Institute, Architect associated with Huson Jackson and Harold Edelman

INDEX NO.	SEMI-REGULAR POLYHEDRA	E/r	DINEDRAL	FACE ANGLES	R/r
V.3.62	Triakis Tetrahedron	3.127	129" 32'	112° 53'	1.2222
V.3.82	Triakis Octahedran	2.083	147° 21'	31° 23'	1.0858
V.4.62	Tetrakis Hexahedron	1.491	143° 8′	83° 37′ 48° 11½′	1.1111
V.(3.4)2	Rhombic Dodecatedron (Octahedric Granatohedron)	1.118	120°	109° 28'	1,3333
V.3.43	Trapezoidal kositetrahedron	0.887	138° 7′	115° 16'	1.1464
٧.4.6.8	Hexakis Octahedron	1.070 0.878 0.656	155° 5′	87° 12′ 55° 1½′ 37° 46½′	1.0488
V.34.4	Pentagonal Icositetrahedron (Two Enantiomorphs)	0.727	136° 20'	114° 48½′ 80° 46′	1.1602
V.3,102	Triakis Icosahadron	0.728	160° 36′	30° 28½	1.0302
V.5.62	Pentakis Dodecahedron	0.780	156° 43'	68° 36' 55° 42'	1.0425
V.(3.5) <sup>2</sup>	Rhombic Triacontahadron (Icosahadric Granatohadron)	0,727	144"	116° 34'	1,1056
V,3.4.5.4	Trapezoidal Hexecontahedron	0.584	154°	118° 16' 86° 59' 67° 46'	1,0530
V.4.6.10	Hexakis Icosahedron	0.586	164° 54'	89° 0′ 58° 14′ 32° 46′	1,0174
V.345	Pentagonal Hexecontahedron (Two Enantiomorphs)	0.500	153° 10'	118° 8′ 67° 28′	1,0574

### HOTES:

e = length of edge of regular and semi-regular polyhedon. © = angle subtended by edge at center (for regular and semi-regular polyhedrol.). ■ Radius of circumscribed sphere (regular + semi-regular polyhedrol.) = length of edges of duals of semi-regular polyhedrol.) = length of edges of duals of semi-regular polyhedrol. & In fin critic, when given for the Archimedean duels, is the ratio of the radius of the recture of the cortex of the cortex of the cortex of the decendant of the radius of the regular polyhedrol. & In fin critic, when given for the Archimedean polyhedrol to the radius of the aphere intertibled within the dual. Examination of the aphere intertible dual polyhedrol to the cortex of the aphere intertibled with the dual. Examination of the aphere intertibled with the dual interval of the aphere intertibled with the dual. Examination of Archimedean polyhedro and their duals cobes; triangular primar, hexagonal primar, transcribled activities for themselves the results triangular way, using more than one type in terratedual catchedra principled to the archimedean polyhedro. There are three additional way, using more than one type in terratedual activities for a production of the truncated terratedual catchedra.

NO.	REGULAR POLYHEDRON	0/R	DIHEDRAL ANGLE	L ANGLE	0	R/r
	Tetrahedran	1.633	70°	32,	109" 28'	3.00
	Cube	1,155	06	0	70° 32′	1.732
	Octahedron	1.414	100"	28,	.06	1,732
	Dodecahedron	0.714	116°	5. 34.	41° 49'	1,258
	Icosahadron	1.051	138	138° 11'	63° 26'	1.258
			DIHEDRA	DIHEDRAL ANGLES		
0	SEMI-REGULAR POLYHEDRON	*/e	Faces	Angles	θ	
	Truncated Tetrahedron	0.853	9-9	70° 32′	50° 28'	
	Truncated Cube	0.562	8 e	125° 16'	32° 39′	
	Truncated Octahedron (Tetrakaidecahedron)	0,6325	4-9	125° 16′	36° 52'	
	Cuboctahedron	1.00		125° 16'	.09	
	Rhombicuboctahedron	0.715	3.4	135°	41° 53'	
	Truncated Cuboctahedron	0.431	4000	135° 16′ 144° 44′	24° 55′	
	Snub Cube (Two Enantiomorphs)	0.744	4.6 6.6	153° 14'	43° 40'	
64	Truncated Dodecahedron	0.337	10.10	116° 34′	19° 24'	
	Truncated Icosahedron	0.4035	6.5	138° 11′	23° 17'	
	(cosidodecahedran (Triacontagon)	0.618		142° 37'	36°	
5.4	Rhombicosidodecahedron	0.448	3.4	159° 6′	25° 52'	
0	Truncated Icasidodecahedron	0.263	0.01	142° 37'	15° 6′	
	Snub Dodecahedron (Two Enantiomorphs)	0.464	3.5	152° 56'	26° 50'	

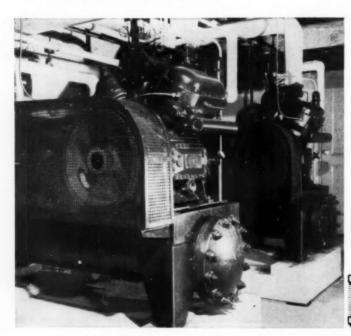
Models" Marila C. Ghyka "Estherique des Proportions", Referencess Cundy and Rollett "Mathematical Gallimard, 1927



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The triangular building sheltered by the canvas awning is constructed of redwood, blue-painted hardboard and copper screen, with the sides, floor and roof built as separate panels which can easily be dismantled for winter storage. The back panel includes the entrance door and a gold pegboard interior wall for brochure display; the two front panels are equipped with a shelf and sliding information doors. The apex of the triangle points toward a drive-through sheltered by the stretched canvas skin. Shaped in a hyperbolic paraboloid by tension applied at the four corners, the canopy is 44 ft wide at the quarter point (its widest span) and 48 ft long. The tail of the kite, which points toward the highway, is supported on a canted four inch pipe 20 ft high. The other end of the awning is connected to a 14 ft pipe centered behind the information building, and the two sides are fastened at the ground. (Side connections are not in full tension in photo shown above right). The canvas is attached directly to the high front pole by a grommet; the other three corners are attached by a 3/4 in. rope with a ratchet winch to adjust tension. Guy wires supplement removable sleeved poles set in concrete.

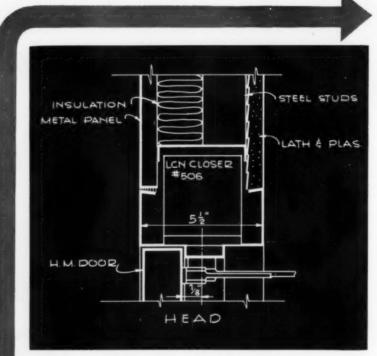
Fabricated of 15 ounce natural finish water proof canvas running perpendicular to the main axis, the skin is reinforced with double french seams along the joints, and ½ in. rope sewn in along the main axis and the four edge seams. Corners are specially reinforced to hold the "D" rings. Like the main building, the canvas is easily demountable for storage.

The triangular sign, of 10 ounce double canvas, prepainted red, is edge reinforced and attached by grommets. Guy wires support movable signs below.

(More Roundup on page 268)

### COLORADO TOURIST CENTER TOPPED BY CANVAS KITE





### **CONSTRUCTION DETAILS**

for LCN Overhead Concealed Door Closer Installation
Shown on Opposite Page

The LCN Series 500 Closer's Main Points:

- Efficient, full rack-and-pinion, two-speed control of the door
- Mechanism entirely concealed; arm visible on inside of an out-swinging door
- Hydraulic back-check prevents door's being thrown open violently to damage door, walls, etc.
- 4. Double lever arm provides maximum power to overcome wind and drafts
- 5. Arm may be hold-open type, 90°-140° or 140°-180°

Complete Catalog on Request—No Obligation or See Sweet's 1957, Sec. 18e/La

### LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

### MODERN DOOR CONTROL BY LCN . CLOSERS CONCEALED IN HEAD FRAME

HAZEL PARK JUNIOR HIGH SCHOOL, SAINT PAUL, MINNESOTA LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page





Recessed type lighting complements the appearance of this suspended acoustical ceiling of Armstrong Arrestone.

### How to select lighting for

Since lighting and acoustical treatments almost always make use of the ceiling area, it is good practice to consider them together, rather than as separate elements.

When selecting any type of lighting fixtures, it is always advisable to consider the effect they will have on the appearance of the acoustical ceiling.

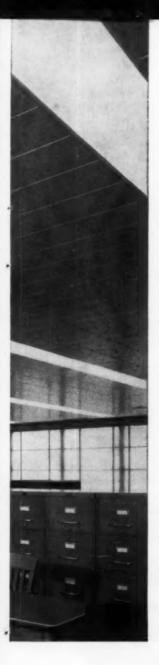
Fixtures located close to the underside of the ceiling, such as cove lighting, are generally unsatisfactory. In such cases, light grazes across the ceiling and emphasizes variations as small as .005 of an inch.

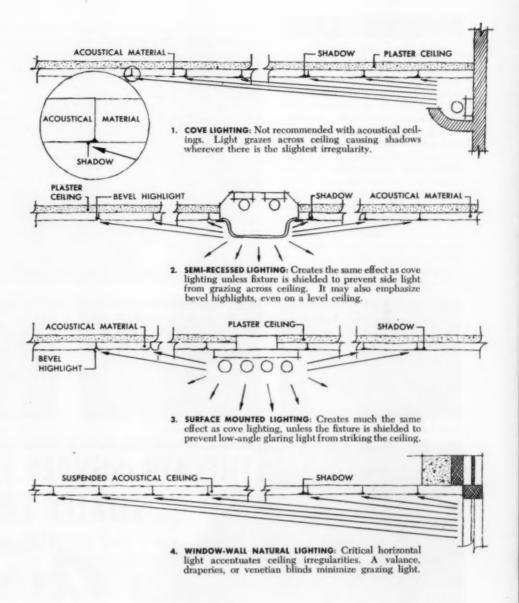
Window-wall lighting and semi-recessed fixtures often create the same uneven ceiling effect. Yet

both can be used with acoustical ceilings if grazing side light is eliminated. With window-wall lighting, this can be done with a valance, draperies, or venetian blinds. Shielding around the outside of semi-recessed fixtures accomplishes the same purpose.

Surface mounted fixtures can also be troublesome in causing ceiling shadows. However, this type of fixture can be shielded to prevent low-angle glaring light from grazing across the ceiling.

The most functional of all types of lighting is the flush recessed fixture commonly used with suspended acoustical ceilings. Besides providing excellent illumination, this type of installation eliminates





### an acoustical ceiling

the shadow problems of side lighting and complements the appearance of an acoustical ceiling.

Regardless of the type of fixture selected, its maximum efficiency will still depend upon light-reflecting surfaces in the area where it is used. That is why all Armstrong Acoustical Ceiling Materials have a factory-applied white finish with a light-reflection value of "a" (more than 75%), as listed in the current Acoustical Materials Association Bulletin. These materials diffuse light evenly, without annoying glare.

Your Armstrong Acoustical Contractor can give you complete information on selecting the best type of lighting for acoustical ceilings, as well as data on the entire line of Armstrong Acoustical Ceilings. You'll find him listed in the Yellow Pages. For your free booklet on the latest sound-conditioning materials and methods, write to Armstrong Cork Company, 4210 Rock Street, Lancaster, Pennsylvania.

### Armstrong

### ACOUSTICAL CEILINGS

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TRADE-MARK

### TECHNICAL ROUNDUP

### TESTS PROVE STABILITY OF SINGLE SPAN CABLE-ARCH

A new approach to the design of wide span, column-free structures has been proved feasible by recent stability tests on a structural model of a special type of long span roof supporting member. The model represents a single span structure consisting of an upwardly curving arch member whose springing points are connected by a downwardly curving cable member with a sag equal to the rise of the arch. The two are joined directly at their extreme ends, and by struts of various lengths at several intermediate points. There are no diagonal bracing members.

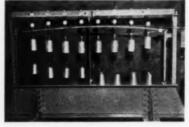
The basic idea for the mating of the arch and suspension system has been



Dead Load in Place: No Live Load

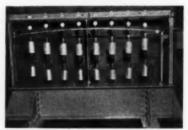
championed in recent years by Italian architect-engineer. Paul Chelazzi, who believes that it might be both feasible and economical for such structures as hangars, arenas, auditoriums, stadiums, terminals, gymnasiums, warehouses, industrial plants and theaters, where wide free spans are necessary or desirable. Although the Suspenarch, as Chelazzi calls the structure was previously known to be stable with equal loads on arch and cable, there was some question as to its stability under unbalanced loading conditions. And, since there are few structures in which loads are always equal, uniform and unchanging, there was a need for developing reliable data on the behavior of the Suspenarch under unsymmetrical live loads.

For this reason, stability tests of the new structural member were undertaken



Unbalanced Live Load

at the laboratory of John A. Roebling's Sons Corporation, under the direction of Blair Birdsall, chief engineer of the firm's Bridge Division. Taking as prototype a hypothetical Suspenarch with a clear span of 127 ft, a structural model was built at a scale of one inch to twenty feet. A series of tests was then conducted to determine the deflection and bending moment of the members under dead load, unbalanced live load and full live load. According to Mr. Birdsall, the results seemed to verify the stability of the member under all conditions of loading. Although no attempt was made to determine whether the particular section selected would be adequate to support the load at allowable unit stresses, the tests seemed to show that it would be satisfactory with some slight changes in the section of the arch.



Full Live Load



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VERTICAL OR HORIZONTAL TANK MOUNTED COMPRESSOR 14 THRU 15 HP.

Two Stage-

1 to 50 hp.

facturing experience "built-in" you can be confident that there are no finer air compressors on the market than Curtis.

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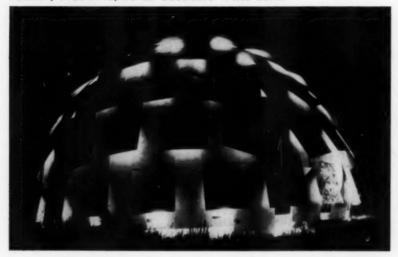
### CURTIS MANUFACTURING CO.

PNEUMATIC DIVISION

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CM-24

FULLER, STUDENTS, BUILD GEODESIC "PINE CONE"



During a recent stint as visiting critic in Cornell University's College of Architecture, Buckminster Fuller enlisted student manpower to build a prototype of the plywood geodesic structure which he proposes as centering for a cheaper kind of reinforced concrete dome. Wrapped with aluminum foil, polyethylene films and reinforcing mesh, the wooden dome could be used to form a

concrete shell one inch thick — or less — and left in place afterwards to serve as a lining for the finished vault. Forming of this type would thus have the dual advantages of low cost (about one-third that of conventional scaffolding and framing) and permanence.

The dome constructed by Cornell's architects-to-be was built of standard 4 by 8 plywood sheets at a cost of 1500

dollars and 750 man-hours. Similar to the conventional geodesic dome in most respects, it differs in one: additional boards are overlapped longitudinally on the boards which form the basic geodesic structure. These "tails" were added to strengthen what was feared to be a potentially weak point in the structure, and to eliminate weatherproofing by serving as shingles over the joints. They also give the dome a spiny appearance that has resulted in its being dubbed Project Pine Cone.

Just shy of 40 ft across and approximately five-eighths of a diameter (25 ft) high, the structure is fabricated of over two hundred sheets of 1/4 in. exterior grade fir plywood fastened by 11/4 by 1/4 in. bolts. It was assembled piece by piece at the site, starting with the top section which was then raised to allow attachment of the next lower boards. This process was continued until all the sections were in place. The lowest boards were then bolted to a plywood collar which had been previously constructed to serve as a mounting for the dome. Holes for the bolts were shop bored, and the boards were prefinished with an aluminum paint before their removal to

(More Roundup on page 272)

### IMPORTANT REASONS WHY

Architects-Engineers-Contractors and Owners

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### CONNECTICUT GENERAL LIFE BUILDING

### uses functional beauty of

### **Alcoa Aluminum**

Only an idea 10 years ago. Five years in the planning and building stage. Even a mock-up section to test materials and techniques . . . and save money. Such was the care given the new Connecticut General Life Insurance Company building in suburban Hartford, Connecticut.

The objectives were: maximum flexibility and economy of operation . . . modern good looks with no loss in functionalism . . . in a suburban environment.

The result: indoor-outdoor living for business that may well be a classic for its time. And inherent in the achievement of functional beauty was the prominent use of Alcoa® Aluminum in natural color for covering exterior columns and spandrel beams . . . for

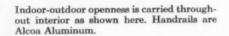
fascias, handrails, structural window framing and many other applications. Another example of the many ways you can use Alcoa Aluminum in architecture.

As the pioneer and pace-setter of architectural uses of aluminum, Alcoa has much to offer you. Complete technical data for many uses and forms are available at your nearest Alcoa sales office. Or write: Aluminum Company of America, 1888-K Alcoa Building, Pittsburgh 19, Pennsylvania.

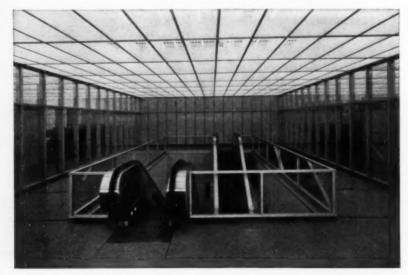


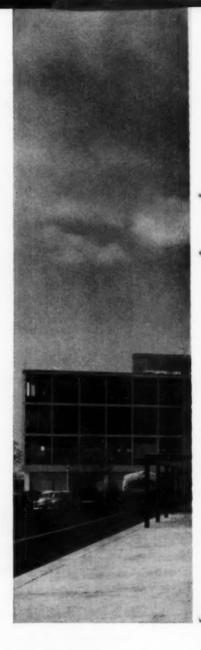
Your Guide to the Best in Aluminum Value

Sweeping curvature of the main entranceway relieves the long, low lines of the building, adds a graceful note to the structure. See how bold use of aluminum accents the facade design.

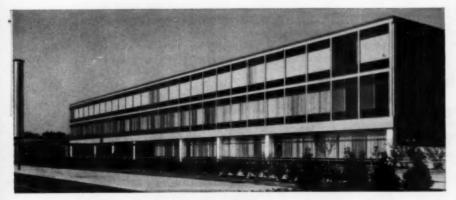












Indoor-outdoor business living is achieved through lavish expanses of glass framed in aluminum that draw the beautiful natural setting into the office.

Masterful blending of functionalism and beauty won Connecticut General's new home office a place on the American Institute of Architects' list of "Ten Buildings in America's Future."

Building: Headquarters Office Connecticut General Life Insurance Co. Hartford 15, Connecticut

Architect: Skidmore, Owings & Merrill, New York

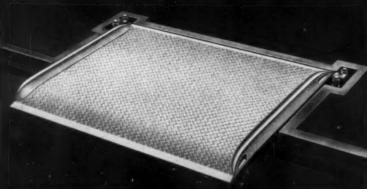
General Contractor: Turner Construction Co., New York

Aluminum Subcontractor: General Bronze Corp., New York



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### **MAGLINER PERMA-DOCKS**

PERMANENT-TYPE MAGNESIUM DOCK BOARDS!



MORE USABLE DOCK SPACE—boards swing up and out of the way ... occupy minimum space in stored position



MAGNESIUM LIGHT—Magliner Perma-Docks are easily raised or lowered by one man in seconds...require no counter balances, no leveling devices. Self adjust automatically to carrier floor level.



MAGNESIUM STRONG—safely handle all popular capacity fork lift trucks . . . provide years of dependable, maintenance-free service.

You can figure on low installation costs when you specify Magliner Perma-Docks . . . your client can look forward to many years of dependable, maintenance-free service. Magliner Perma-Docks perform better, look better, are easier to install . . . at savings that frequently run as high as 65%! Efficient, practical design provides more usable dock space, requires minimum storage space . . . dock boards swing up and out of the way when not in use. Made of magnesium, the world's lightest structural metal, Perma-Docks require no counter balances, no leveling devices . . . self-adjust automatically to truck or trailer floor level.

Other advantages for your client include: Tire Saver Safety Curbs to prevent truck run-off and protect against power truck tire damage; crowned design to prevent hang up of low underclearance equipment; flared curb ends for safe wide angle turns; beveled edges to eliminate load jar. Plans that specify Magliner Perma-Docks assure the client a safer, more efficient dock loading operation—the architect a job well done.



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City		Zone	s	tate	

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### TECHNICAL ROUNDUP

### MINIATURE LIGHT CELL FOR DAYLIGHT RESEARCH



A miniature light cell developed by Bob H. Reed and Matthew A. Nowak (photo above) for use in lighting research at the Texas Engineering Experiment Station makes it possible to conduct illumination studies on smaller models than have heretofore been considered practical. The body of the cell, into which a filter and cosine corrector have been incorporated along with a sensing element only 1/4 in. in diameter, can be attached to various size bases so that the 30 in. desk height of the cell can be maintained for different scales of models. Since most model studies are conducted under the stations artificial sky, cell response is quite low; and readings are taken with a driver amplifier and recorder coupled to a low level preamplifier with zero suppression.

To cover both dynamic and steady state conditions, a two channel system is used. For the dynamic conditions, one cell is used to measure illumination from a quarter sphere of unobstructed sky; while a second cell measures the illumination level at various points within the building; and both readings are recorded simultaneously. The daylight factor is then obtained by dividing the inside illumination value by the outside illumination at various points.

For steady state conditions, a single cell is placed in a baffle which cuts off the ground light and allows the cell to receive light from a quarter sphere of sky. This reading is set up on the recorder as a full scale deflection by use of a variable shunt, and expressed as 100 per cent or as 1. The cell is then removed from the baffle and placed at various points within the model, and internal readings are recorded as percent available light or as utilization factors.

Although readings taken by the two methods are said to show excellent agreement under similar conditions, the single-cell technique reduces calibration time and facilitates recording.

(More Roundup on page 276)



Supply storage room for arts and crafts classes.



Ceramics teaching area.



Storage facilities for art pupils.



View of elementary arts and crafts room.



Opposite view of arts and crafts room for elementary students.

FOR: Clothing Laboratory
• Laundry Areas • Sewing
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### FOR ARTS & CRAFTS IN WYANDOTTE



General view of crafts areas.

In the new Woodrow Wilson Junior High and Wm. H. Taft Elementary Schools of Wyandotte, Michigan, are the latest in modern arts and crafts teaching facilities... planned and installed under the guidance of a Mutschler sales engineer, who had the advantage of nation-wide experience to offer. If you plan to build or remodel school facilities, see a Mutschler sales engineer. His services cost absolutely nothing extra when you specify Mutschler . . . the finest in hardwood cabinetwork for schools. Send coupon below.

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Available in two- and four-light models (4-light illustrated).

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### the new Gibson Ceilo-35\*

designed expressly for low-ceiling application.

Measures only 2% in depth and

leatures exclusive parabolic reflectors

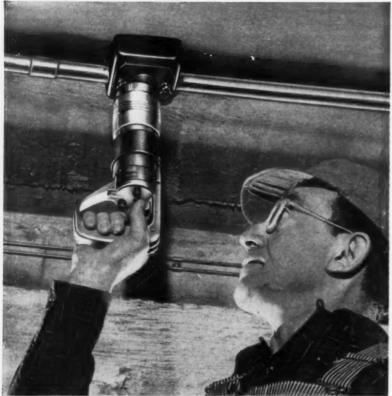
which provide a smooth, shadowless

panel of light.

ortho-77

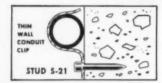
You really sughtest know more about its to way not stop as a line now for complete information on the Chilo-35

### Just one of 101 Stud Driver uses!



No outside power source required-

### Anchor conduit clips to concrete or steel in seconds with the **Remington Stud Driver**



REMINGTON CONDUIT CLIP is easily anchored to concrete or steel with S-21 Stud. Special Conduit Clip Guard instantly adjusts to size of pipe or conduit . . . assures accurate, arrow-straight placement of stud.

Now you can fasten conduit without hammering or drilling-thanks to the cartridgepowered Stud Driver! Just squeeze the trigger, and a metal stud anchors conduit with Remington Clip-thin or heavy wall, available in three sizes. The Stud Driver sets either 1/4" or 3/8" diameter studs... up to six a minute. And barrel change-over takes just 90 seconds, right on the job. Over 40 studs to choose from, plus a selection of scientifically graded 22 and 32 caliber Power Loads give the flexibility you need for all light, medium or heavy-duty work.

SAVE TIME, CUT COSTS on every job with this modern tool. Coupon brings free booklet that shows how and where to use the Stud Driver.



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Please send me your free booklet which shows how I can speed the job and save with the Stud Driver.

Name	Position
Firm	
Address	
City	State

### TECHNICAL ROUNDUP

### TESTS SHOW MASONRY WALL TIES CAN ELIMINATE HEADERS



Preliminary results of studies on the possibility of eliminating the header course in two wythe masonry wall construction indicate that the use of properly designed masonry wall ties not only makes a header unnecessary, but also increases the lateral strength of the wall.

The investigation, conducted by Armour Research Foundation at Illinois Institute of Technology, was carried out using transverse and compressive tests on small-scale masonry walls 48 in. high, 32 in. wide and 8 in. thick. The first test series consisted of two sets of brick and block walls, one with header courses and the other with wall ties; the second series consisted of reinforced and unreinforced 8 in. concrete block walls. The ties used were those marketed by the AA Wire Products Company under the trade name Econo-Lok. Designed to control the difference in expansion and contraction of the concrete block backup and brick facing used in the most common type of two wythe wall, this combination reinforcement and tie provides two parallel reinforcing wires which rest on the face shell webbing of the concrete block backup. The facing is tied to the backing by 4 in. rectangular ties flush welded to the parallel wires at 16 in. intervals.

From the test results, the following conclusions were drawn:

1) Replacement of header courses by wire reinforcement does not reduce the transverse strength of a wall, but may increase it. (Average modulus of rupture was 77 psi for wire reinforced walls, 31 psi for header tied walls.)

2) Replacement of header courses by wire reinforcement does not reduce the compressive strength of a wall.

3) Wire reinforcement of correct design can satisfactorily replace header courses.

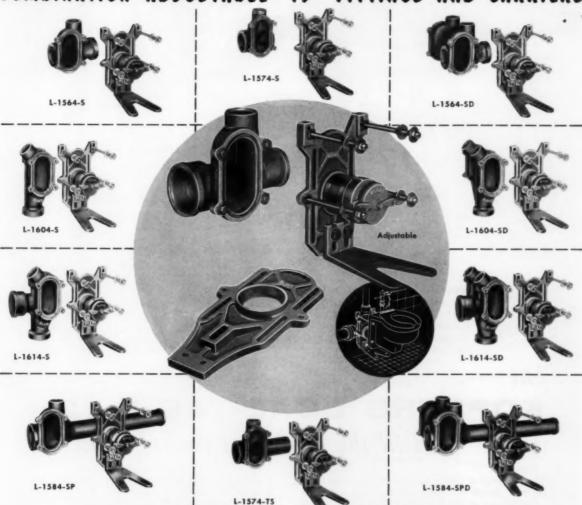
4) Wire reinforcement improves neither the transverse nor compressive strength of 8 in. block walls.

### Remington,



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COMBINATION ADJUSTABLE "TY" FITTINGS AND CARRIERS



### KEEP THE FIXTURES OFF THE FLOOR!

**Blake Carriers for Wall Type Fixtures Include:** 



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**√** CLOSETS

**✓ LAVATORIES** 

**VURINALS** 

**√** SINKS

**V HOSPITAL LAVATORIES** 

**V HOSPITAL SINKS** 

**√** STERILIZERS

URINAL CARRIER

Blake engineered design "TY" fittings and carriers support wall type closets independent of the wall, providing sanitary and easily maintained rest rooms. A compact, efficient assembly of component parts requiring a minimum of space, Blake "TY" fittings conserve valuable building area and insure proper waste line pitch.

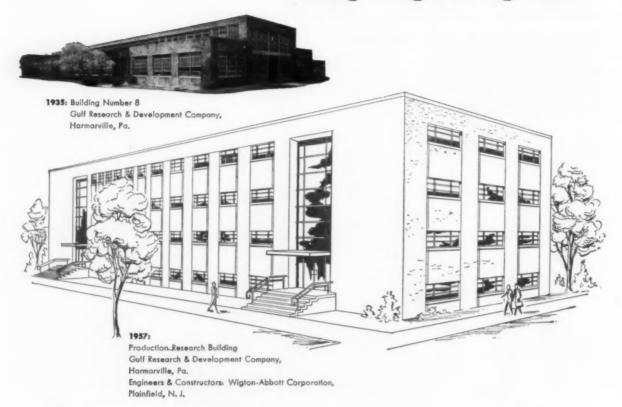
· Horizontal or vertical installations · Single or double applications • Screw pipe or soil pipe • Syphon-jet or blow-out closets • Single installations or for batteries For complete information on all Blake combination adjustable "TY" fittings and carriers, mail coupon.

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City	Zone	State

### building design changes...



### but

### KOPPERS COAL-TAR PITCH

### is still the preferred roofing material

The buildings at Gulf's Research laboratories trace in their design the architectural trends since the establishment of this activity in 1935. Building 8 is one of three original structures; the latest addition to Gulf's extensive research facilities is the Production Research building, designed by Wigton-Abbott and now nearing completion. Both have one thing in common: they are protected with 20-year Bonded Koppers Coal-Tar Pitch Built-Up Roofing.

All the flat-roofed buildings at Gulf's modern research center are covered with Koppers Bonded Roofing, including the new, staff-designed Nuclear Science building and the Automotive Products laboratory, widely acclaimed as a model of its type.

Proved protective ability is a prerequisite in the selection of a roofing material for research buildings housing expensive equipment. That's why Gulf and its architects specified *coal-tar pitch*. And the excellent service record of the Koppers Roof on Building 8 during, *and beyond*, its 20-year bond period is typical of the long-lasting, trouble-free protection which only coal-tar pitch, with its unique waterproofing and "cold-flow" properties, can give.

Recommend Koppers Coal-Tar Pitch, the quality roofing material, to safeguard your client's investment. You'll find helpful specification information in our Sweet's Architectural File 12-B, 8a/Ko. The Koppers representative in your area can provide additional data and render valuable service. Koppers Company, Inc., Tar Products Division, Pittsburgh 19, Pa. District Offices: Boston, Chicago, Los Angeles, New York, Pittsburgh, and Woodward, Ala.



### **KOPPERS**

COAL-TAR PITCH BUILT-UP ROOFING

### **Verti-Slide Window Takes** Uαlco Wind and Water in Stride



Golt Ocean Mile Hotel, Ft. Lauderdale, Fla. Owner: Land & General Finance Corp. Operator: Royal Continental Hotel Corp. Architects: MacKay & Gibbs, Miam: Beach, and Marton Ironmanger, Ft. Lauderdale General Contractor: Atlantic Construction and Engineering Corp.

The owners wanted an air-tight, watertight window for the Galt Ocean Mile Hotel, under construction on the beach at Ft. Lauderdale, Florida, A single UALCO Verti-Slide Window was installed in a section of the unfinished wall. Tough water and wind tests were made. The Verti-Slide passed with flying colors and was specified for the entire hotel.

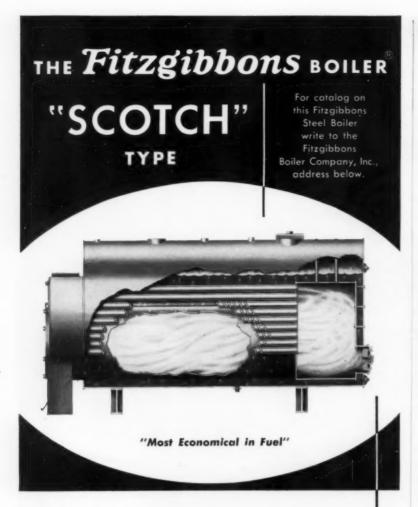
Continuous lifetime stainless steel weatherstripping at head, jambs, and sill. Integral "nail-on" fin and sill for beauty and quick, one-man installation. Spring loaded locks secure sash in closed or open positions. Outside channel for interchangeable screen and storm sash installation from room side of window.



SOUTHERN SASH OF MONTGOMERY, INC. SOUTHERN SASH OF HUNTSVILLE, INC. SOUTHERN SASH OF NEW JERSEY, INC. SOUTHERN SASH OF FLORIDA, INC. SOUTHERN SASH OF CALIFORNIA, INC. SOUTHERN SASH OF OHIO, INC. SOUTHERN SASH WHOLESALE, INC. SOUTHERN SASH OF FLORENCE, INC.

World's Largest Manufacturer of Aluminum Windows

OUTHERN ASH



Full Wet Back Construction – A design feature promoted by Fitzgibbons for many years. The rear horizontal combustion area is completely water jacketed on top, sides and back, eliminating need of any refractory lining.

**Low Headroom** – is a feature of the Fitzgibbons "Scotch" Type Boiler. No expensive base setting is required and the lower waterline of the design provides substantial savings in boiler room installations through the elimination of extra excavation.

**Easy Cleaning** – is always possible with a Fitzgibbons "Scotch" Type Boiler through accessible openings to all combustion surfaces – the firebox, tubes and rear combustion chamber.

**High Efficiency** – 80% or better when properly installed with a well-designed, correctly adjusted oil or gas burner.

### Fitzgibbons

Boiler Company, Inc.

101 PARK AVENUE, NEW YORK 17, N. Y.
Dept. 10



PRODUCT REPORTS

(Continued from page 253)



### **Concave Front Lavatory**

The new Wellington 300 vitreous china vanity lavatory features a gracefully curved front apron for added comfort and style. The industry's first concave-front lavatory, it is also the first offered with rust proof wrought iron legs. Produced in black and white plus 41 colors, the lavatory can be had with a choice of chrome plated or polished brass water controls. Overall size is 32 by 24 inches; the rectangular basin is 16½ by 12¼ inches. Case Mfg. Co., 33 Main St., Buffalo 3, N. Y.



### Drive-Up Banking Window

According to its manufacturer, the new MCT (for More Customer Traffic) drive-up banking window increases both customer traffic flow and employee efficiency by incorporating features designed to speed banking transactions. Among these features are an electricallyoperated deal drawer which extends a full 18 in. and can be controlled by the teller at every point in its seven-second cycle to the customer and back; a highfidelity system for simultaneous communication between customer and teller; and a 60-in. bay window design that provides unobstructed three-way vision through glass sections set flush with the counter. All exterior structural surfaces are of stainless steel, and the inwardly slanted glass panels are of bulletresistive glass. Diebold, Inc., 818 Mulberry Rd., S. E., Canton 2, Ohio.

(More Products on page 284)



### DESIGNED FOR THE CLASSROOM

Norman Gas-Fired Forced Air Schoolroom Heating and Ventilating System

If you're planning a new school or adding rooms to an old one, be sure to check into the advantages of the Norman Schoolroom System — quality engineered after years of research and study in school heating and ventilating requirements. Outside air only is used for combustion.

IN NEW SCHOOLS—the Norman Schoolroom System eliminates the need for extra space or a separate building to house a central heating plant. No interconnecting supply or return mains are needed. FOR ADDITIONS—simply add a Norman Classroom Package for each new classroom. It has everything needed for healthful, economical and fully automatic heating and ventilating.

### NORMAN OVERHEAD HEATING FOR SCHOOL CORRIDORS, CAFETERIAS

Norman Three-Sixty Radial Downflow and Downblast Unit Heaters

- Forced Exhaust 100% Outside Air For Combustion

Norman gas-fired unit heaters add comfort to large areas of the school. Radial models draw room air into bottom of unit; distribute tempered air in full 360° 'umbrella' of warmth. For high ceilings, Downblast models draw air in at top; force heat downward to cover large floor areas.



products



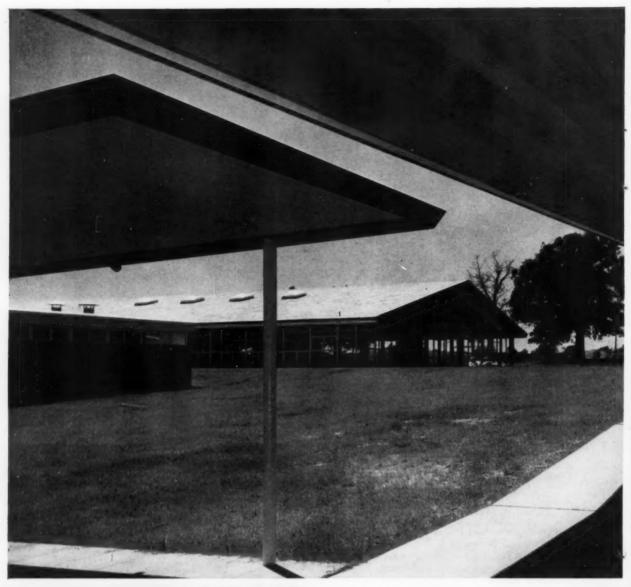






Mail the coupon now for literature and specifications on the Norman gas-fired Schoolroom System which provides efficient forced air distribution through ducts and diffusers in strong furniture metal bookshelf sections.

1152 Chesapeake Ave., Colu	mbus 12, Ohio
	specifications on the Normar all-new Norman Three Sixty. TITLE
COMPANY NAME	
ADDRESS	
CITY	ZONE STATE





The J. R. Moore Junior High School, Tyler, Texas, is equipped with B&G Boosters where low heads and small motors are adequate and B&G Universal Pumps where high beads and capacities are required. B&G Airstol Fittings and Compression Tanks are also installed for effective control of air in the system.

ARCHITECTS-ENGINEERS: Caudill-Rowlett-Scott, Bruce and Russell, Associated, Bryan and Tyler, Texas

MECHANICAL ENGINEER: J. W. Hall, Jr., Bryan, Texas

MECHANICAL CONTRACTOR: Leon Southall Plumbing Co., Longview, Texas



### COMPLETE LINE FOR HEATING



**Water Heaters** 



Monofle Fittings



Relief and Reducing Valves



Flo-Control Valves



**Compression Tanks** 





### B&G CIRCULATING PUMPS



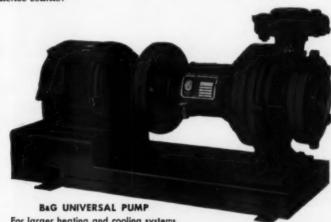
### where silence counts!

The satisfactory performance of a circulated water system for heating or cooling is essentially dependent upon the pumping equipment.

Quiet pump operation is all-important. Transmission of pump noise through the piping system can create an annoying condition which penalizes careful designing and installation.

B&G Booster and Universal Pumps are engineered and built to meet the exacting demands of water heating and cooling systems. These are not run-of-mine centrifugal pumps...they are distinguished by numerous features which assure silent, vibrationless operation. Among these are specially built, more costly motors, tested for quietness—oversized shafts of hardened alloy steel—long sleeve bearings—noise dampening spring couplers—oil lubrication and leak-proof mechanical seals.

That's why B&G Circulating Pumps are preferred...they're quiet where silence counts!

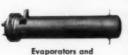


For larger heating and cooling systems.

Capacities to 12,000,000 BTU.



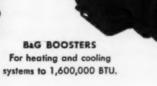
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Condensers







BELL & GOSSETT

COMPANY

Dept. EZ-32, Morton Grove, Illinois
Canadian License: S. A. Armstrong Ltd., 1400 O'Connor Drive, Toronto 16, Ontario



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### FRODUCT REPORTS



### Self-Aligning Luminaire Support

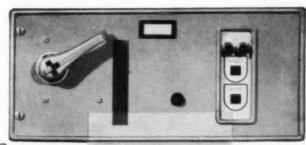
The Stemobile, a new stem-and-canopy luminaire support, provides 45 degree mobility of stem at ceiling and fixture to prevent damage or breakage by earthquake or accidental impact as well as to give self-aligning plumb suspension. A ball-and-socket suspension at the ceiling permits the stem to swing freely in any direction, while a combination of locktab and set-screw prevents rotation of the stem at the joint. To permit similar mobility of the fixture, the stem bottom threads through a rocker action pivot. The assembly suspends on 3 or 4 in. outlet boxes, or can be stud-mounted through the center hole of a mounting plate. Lock-tabs secure the canopy without visible nuts or bolts. Globe Lighting Products, Inc., 2121 S. Main St., Los Angeles 7, Calif.

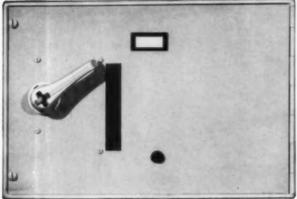


### Louvered Light-Controlling Lens

The new Guth Prismoid-Gratelite, a louver-lens of intersecting prismatic refractive elements formed around truncated pyramidical apertures, combines efficient (86.1 per cent) illumination with low brightness control and full 45 by 45 degree lamp shielding. Because it is open like a louver, ventilation is increased, and longer ballast life and cleaner lamps are assured. The new louver-lens is available on many Guth luminaires, as well as in 11 by 48 or 16 by 48 inch panels injection molded from either polystyrene or acrylic plastic. Edwin F. Guth Co., 2615 Washington Ave., St. Louis 3, Mo.

(More Products on page 289)





### Announcing: NEW Westinghouse 14- and 91/3-inch modular units for additional versatility

Complete Interchangeability Plus New Safety Features Mark Industry's Newest Control Center

The clean, efficient design of this new unit is the answer to today's—and tomorrow's—needs for complete flexibility in control center installations. Not only do you get the additional versatility of the new 9½-inch units, but also complete interchangeability with the old.

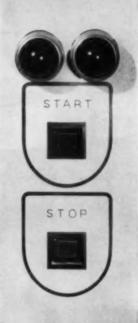
New safety features protect both personnel and equipment fully. Just as important as the dividends in installation, maintenance and safety are the moneysaving advantages of dealing with one source with complete responsibility for all your control center needs.

To learn more about the newest control center in the industry, call your Westinghouse sales engineer. Or, write Westinghouse Electric Corporation, 3 Gateway Center, P. O. Box 868, Pittsburgh 30, Pennsylvania.

YOU CAN BE SURE ... IF IT'S

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for a lifetime
of beauty...utility



and out. Exposed surfaces are then re-fired in your choice of to complement any décor. Edges are bound in stainless steel; construction details satisfy most rigid specification standards. Weis Vitre-Steel is built to defy use and abuse wherever installed — in schools, hospitals, office buildings, factories, or any building handling a high volume of traffic. Glass-hard Vitre-Steel is also highly resistant to acids, cleaning compounds . . . even defacement. Available in Ceiling-Hung and Floor-Braced types or Hi-Stile type illustrated. Get the facts on Weis Vitre-Steel before

HENRY WEIS MANUFACTURING CO., INC. 5657 Weisteel Building, Elkhart, Indiana Please send specifications and catalog of Weis toilet compartments.

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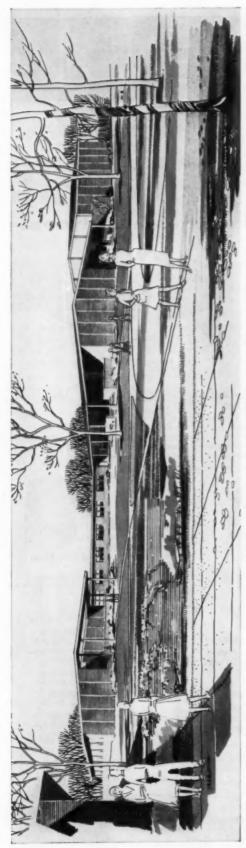
specifying. Send coupon for complete information and catalog.











View looking toward the Chestnut Hill Elementary School. Architects: Sargent, Webster, Crenshaw and Folley, Syracuse, New York

# LIVERPOOL SCHOOLS COST 18.6% LESS WITH STRAN-STEEL FRAMING

By using lightweight Stran-Steel framing for construction of the new Chestnut Hill elementary and junior high schools, the school board of Liverpool, N. Y., saved \$286,361 over median cost figures for the state of New York.

Savings were achieved through these basic design and construction innovations, combined with material and labor saving economies:

- framework was assembled from standard lengths of joists, channels and studs. One-floor design using Stran-Steel framework, site-fabricated. Complete steel
- Collateral materials were nailed directly to framework by carpenters. The nailable feature of Stran-Steel framing for low-cost finishing.

These schools are in a northern climatic area requiring fully insulated buildings and complete heating systems. Proportional savings can be obtained with Stran-Steel in less costly schools in milder climates as well.

## CHESTNUT HILL ELEMENTARY SCHOOL

a music room, two guidance rooms, a two-station gym-playroom with changing rooms and showers. Also, an administrative suite, a conference room and lounge for the teaching staff, a service area and a complete kitchen. Total: 50,028 square feet. Designed for 600 students. There are 21 regular classrooms, a cafeteria seating 200 also used as an assembly room, a library,

## CHESTNUT HILL JUNIOR HIGH SCHOOL

rooms, a cafeteria-assembly room, a library, a home-making suite of two classrooms, two industrial arts shops, one art room and a large separate double gymnasium. It also has adminis-trative and teacher facilities similar to the elementary school, two service roomsand a complete kitchen. Total: 55,835 square feel. Also designed for 600 students. There are 20 regular class-

Just send the coupon for more information on how Stran-Steel architectural products can save your clients money on their next school construction job.



### STRAN-STEEL CORPORATION Detreit 29, Michigan . Division of

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### Stran-Steel Corporation, Dept. 23-65 Detroit 29, Michigan

Please send me more information about school design utilizing Stran-Steel architectural products.

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### BY ZEUS!

incandescent fixtures are TOPS!



### SQUARE RECESS UNITS

with Holophane and Corning lenses for Intensive, Diffusing, Concave, Convex, Focusing and Asymmetrical distributions.



### ALZAK PIN-HOLE RECESS LIGHTS

For intense downlighting-100 watt to 1000 watt sizes in General Service and Silver Bowl lamp types.



### Both EYEBALL (shown) and CONCEALED rotator. Adjustable recess downlites for PAR and R-lamps.

SILVER BOWL DIFFUSING fixtures in  $4' \times 4'$  and  $2' \times 4'$  sizes with the amazing GRATELITE Louver Diffuser\*.



### CORRIDOR PRISMATIC RECESS FIXTURES

Three types for 21/2:1 and 1:1 ratios.



### **ROUND CONCAVE RECESS**

Also available with Flat or Prismatic glass, and with metal concentric rings or open types.



lighting.

### BABY RECESS LIGHTS For directional markers,

night lights, other minimum intensity installations. Narrow beam or drop-lens types.



### ALZAK HINGED GLASS Drum Units

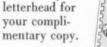
Hinges on concealed chain for easy relamping and cleaning.



### GRATELITE INDIRECT **Pendant Type**

For luminous indirect lighting in schools, stores and offices. Som thing new ... and beautiful!

\*GRATELITE Louver Diffuser® U. S. Pat. No. 2,745,001. Cona-dian Patented 1957, No. 538,245.



incandescent lighting job.

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THE EDWIN F. GUTH COMPANY 2615 Washington Bivd. . St. Louis 3, Mo.

These and many, many more

incandescent fixtures are included in

this new Brascolite Catalog by Guth.

A complete working tool, it contains

all information needed to figure any



### Behold! My New Name: SEEMORE

In response to my pleas for a name, many splendid suggestions were presented. After much thoughtful consideration, I have chosen the name "Seemore", submitted by

MR. WILLIAM J. MAGILL Lighting Consultant Southern California Edison Co. P. O. Box 410 Long Beach 1, California

To Mr. Magill, and to the others listed below, whose suggestions were also deemed worthy of reward, I am dispatching a bottle of Metaxa—that most excellent Greek brandy. My warmest thanks to all of you who so kindly assisted in my quest for a name.

MR. A. E. BRUNER Lighting Specialist The Electric Supply Co. 128 Walton St., N.W. Atlanta, Georgia MR. R. S. SMITH

MR. R. S. SMITH Consulting Engineer 3230 Ave. "J" Fort Worth, Texas

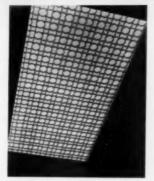
MR. JACK PARSONS
Illuminating Engineer
Niagara Mohawk Power Corp.
Buffalo 3, New York

MARY MacD. TRACY Eaton W. Tarbell & Assoc., Inc., Architects 173 Exchange St. Bangor, Maine



THE EDWIN F. BUTH COMPANY 2615 Washington Bivd. + St. Louis 3, Mo.

### PRODUCT REPORTS



Plastic Grid Sandwich Panel

To minimize the thermal instability found in assemblies of dissimilar materials, a new all-plastic structural panel employs a decorative grid core of reinforced plastic in a variety of patterns and colors sandwiched between reinforced plastic sheets. In spite of its extreme light weight, the resulting homogeneous unit is capable of withstanding normal uniform roof loads with large safety factors. The panels are now being marketed in sizes up to 48 by 120 inches for use as a basic building material in curtain wall applications and integral roof systems, and are also being made available in complete skylight units with perimeter flashing permanently bonded for both curb mounting and mop-in systems. U factors vary from .04 to .05; light transmission can be specified from 5 to 60 per cent. Design Industries, 1355 River Rd., Eugene, Oregon.



Indoor-Outdoor Luminaire

The weather-resistant construction of McPhilben's new Model 32–88 square bowl ceiling unit permits its use for both interior and exterior installations such as canopies, corridors, entrances, vestibules, and shower rooms. Projecting only 4½ in. from the ceiling, the square glass ceiling bowl is mounted in a hinged cast aluminum band which swings to one side for relamping or cleaning. An 18 gage zinc-clad steel backplate contains porcelain lamp holders to accommodate two 100 watt lamps. McPhilben Mfg. Co., Inc., 1329 Willoughby Ave., Brooklyn 37, N. Y.

(More Products on page 292)

Alone in all the world...

### "CARILLON AMERICANA"\*

Until you hear "Carillon Americana," you simply cannot know the full beauty and inspiration of carillon music. Introduced at Florida's famed

### SINGING TOWER

the "Carillon Americana" places entirely new tone colors at the command of the artist at the console. To bell tones of traditional majesty, the carillonneur can now add the enchanting voices of the plucked harp and silvery celesta. Moreover, he can vary the harmonic content of each note and chord at will. The result is a musical panorama far richer than carillons have ever offered before.

In designing churches and other institutional and commercial buildings, consider the many advantages of Schulmerich bell instruments. Cost is moderate. Weight is no problem. Installation is handled by factory representatives. Schulmerich instruments range from the fabulous "Carillon Americana" to automatic, single-bell instruments for purely liturgical use. Your inquiry will receive prompt attention.

"Carillon Americana" is a trademark of

Schulmerich Carillons, Inc. CV107 Carillon Hill, Sellersville, Pa.



### Will The School You Are Planning

### Ever Need AIR

### Here's a partial list of schools which are air conditioned now, or are ready for it anytime — with Herman Nelson unit ventilators

Pleasant Hill School Austin, Texas

St. Paul Evangelical Lutheran Church Dolton, Illinois

Davy Crockett School Phoenix, Arizona

Wilmot School Wilmot, Wisconsin

Niles Township High School Skokie, Illinois

South High School Bakersfield, California

Morrillton Elementary School Morrillton, Arkansas

Sierra Joint Union High School Auberry, California

St. Paul's Lutheran Church Clyde, Ohio

Catholic Student Center Louisiana State University Baton Rouge, Louisiana

Immaculate Heart of Mary Parish Chicago, Illinois

New Science Building Northeastern State College Tahlequah, Oklahoma South Union Junior High School Fresno, California

Mockingbird Road Elementary School Vero Beach, Florida

Administration & Educational Building Buena Vista College Storm Lake, Iowa

St. Monica Parish Church Willows, California

Purdue University W. Lafayette, Indiana

Wm. S. Speed Building University of Louisville Louisville, Kentucky

Elementary School Phoenix, Arizona

Lodi High School Lodi, California

McKinley School Bakersfield, California

St. John the Baptist School Chico, California

St. Monica's Church & School Dallas, Texas

Southeastern College Hammond, Louisiana Trinity Episcopal Church Lawrence, Kansas

Our Lady of Fatima Shrine South Bend, Indiana

Sardis Presbyterian Church Charlotte, North Carolina

Theodore Roosevelt School India, California

St. Peter & Paul Parish Turkey Creek, Indiana

Belle Isle Elementary School Oklahoma City, Oklahoma

Eunice Smith School Alton, Illinois

Holy Name Elementary School Cook, Indiana

University of Pennsylvania Philadelphia, Pennsylvania

Swarthmore College Swarthmore, Pennsylvania

Immaculate Heart of Mary Parish New Orleans, Louisiana

St. Mary's Church Ft. Worth, Texas

St. Patrick's Church Denison, Texas



### Already, more than 100 schools have planned for it — by installing HerNel-Cool II

Nearly every school would benefit from air conditioning as have offices, theaters, hospitals and homes. In fact, many new schools are air conditioned, or have prepared for it—by installing HerNel-Cool II unit ventilators. This Herman Nelson product is the first unit ventilator to offer optional air conditioning, as well as heating, ventilating and natural cooling (with outside air).

Already—less than a year after its introduction—it has been selected for use in more than 100 schools throughout the country. And no wonder!

These units can be installed now so that the school enjoys all the usual benefits of the famous Herman Nelson DRAFT|STOP system. Only the addition of a chiller in the boiler room is needed for complete hot weather air conditioning. This can be provided initially, or if it's not in the current school budget—at any future time. Whenever it is wanted, air conditioning can be

secured without disruption of school activities . . . and without expensive alteration and installation charges.

### HOW THE SYSTEM WORKS

HerNel-Cool II units provide individual temperature control for each room, automatically. Most of the year they provide heat, ventilation, or natural cooling (with outside air) as the room requires. When a chiller is installed in the boiler room, HerNel-Cool II units also function as air conditioners.

In hot weather, the units switch automatically to mechanical cooling, with chilled water circulating in the same piping that carries hot water during cold weather. The cost is far less than separate heating and air conditioning systems—both for installation and operation.

Would you like more information? Just write to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.



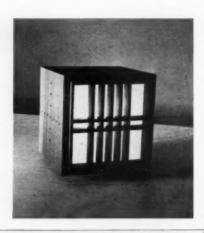
ANY FUEL, ANY CLIMATE—There is a Herman Nelson Unit Specifically

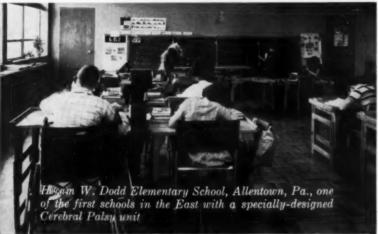
Designed to Give You More Classroom Comfort Per Dollar

### PRODUCT REPORTS

### **Thermal Textured Granite**

An old facing material is gaining new popularity through the use of a thermal texturing process that produces a rough finish by controlled spalling with an oxy-acetylene flame. The resulting textured surface, which is both decorative and practically impervious to weathering, can be used for walking surfaces, building panels or almost any other granite application. In addition, thermal texturing is often the least costly finishing process. Cold Spring Granile Co., Cold Spring, Minn.





### WOLF & HAHN, ARCHITECTS

ALLENTOWN, PA.

### NATURAL SLATE CHALKBOARDS

. . because young eyes deserve the best!

The Hiram Dodd School is truly a step forward in education for the handicapped. Besides regular classroom space, it contains a complete, specially-equipped wing for its group of Cerebral Palsy students. And as forward-looking as the thinking behind this new school is the choice of natural slate chalkboards for every classroom, because of all chalkboards, slate communicates best. Only white chalk on slate produces the desired high contrast necessary to permit young eyes to see and grasp the written message instantly. Easy to clean . . . virtually indestructible . . . slate has the lowest annual cost of any other chalkboard. For timeleseauty, durability, readability, specify slate quarried in Pennsylvania. Inquiries welcomed on specific properties of slate.



### CUSTOM LIGHTING FIXTURES IN WALNUT AND FIBER GLASS

A new look in lighting has been achieved by designer Leslie Larson in his line of eight "lanterns" hand-crafted in natural walnut and fiber glass. Escaping from behind fences classified as boxes, cages and a column, the light spills out in a variety of patterns, producing a rich texture of light and shadow.

The four light boxes in the line are essentially closed on top, bottom and two sides, with the opaque surfaces pierced only by small slits and perforations. The other two sides filter light through a wood grillwork backed by fiber glass. Two of the light boxes, one 54 in. high by 7 in. square and the other 24 in. high by 91/2 by 6 in., are designed for wall mounting, their grilled ends allowing light to slide out along the wall. The other two are table boxes, both of which combine two grilled ends with perforated sides and slatted tops. One model is tall (18 in. high by 5 in. square), while the other is an eight inch cube.

The light cages differ from the boxes in that they are formed by the knitting together of vertical and horizontal members and are "open" on all sides. Two of them are table models, both 16 in. high by 4 in. square, but differing in detail. The third is a hanging cage thirty inches high and eight by nine inches in plan. More detailed than the table models, it features three dominant members which continue around top and bottom and two sides and are joined by regularly spaced bars. The other two sides are composed of more delicate grills.

The last model in the line is a light column designed to stand on the floor. Five feet high and six inches square, it resembles an extended light cage combining four double vertical strips superimposed on five regularly spaced wider horizontal members. Light from two 12 in. showcase bulbs is shielded by a square fiber glass tube. Leslie Larson, Designer, 819 Madison Ave., New York 21, N. Y.





(More Products on page 296)



MICARTA® can serve you, too, in thousands of ways. In hotels, hospitals, restaurants and other public places you can specify it with assurance for counter and bar tops, reception desks, walls and partitions. In stores, shops and offices, architects have specified MICARTA for desk tops, baseboards, counters, elevators, and service islands as well as wall paneling.

Best of all, did you know MICARTA is available in eighty-seven different colors in nine different patterns? All approved by top designers and decorators, too.

Westinghouse MICA

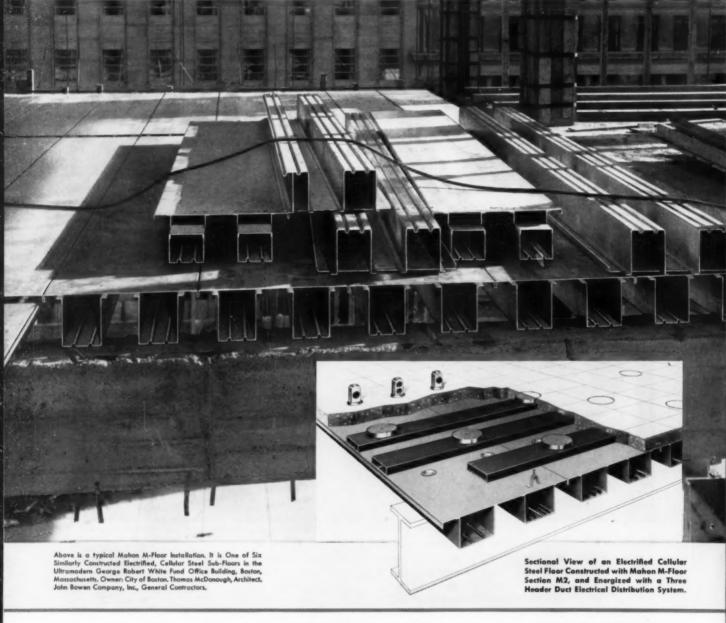
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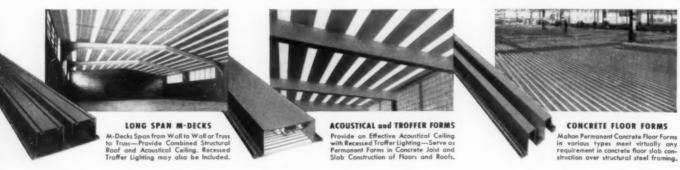
Delicate pastels or rich wood grains, marbles, leathers and linens, plus decorator colors. And you can depend upon client-pleasing MICARTA to last as long as the building itself! J-06651

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# M-FLOORS Provide Built-In





# Assurance Against Electrical Obsolescence in Another New, Modern Office Building!

# MAHON M-FLOOR SECTIONS CEL-BEAMS, WHICH ARE OTILIZED AS ELECTRICAL RACEWAYS, ARE 6" WIDE 24" SECTION M2-1.5 CEL-BEAM DEPTH 1½" SECTION M2-3 CEL-BEAM DEPTH 4½" SECTION M2-4.5° CEL-BEAM DEPTH 4½"

In the multiple-story office building shown under construction at the left, deep Mahon M-Floor Sections were employed for the Electrified, Cellular Steel Sub-Floors which were designed for an unusual load of 250 lbs. per sq. ft. In selecting this particular Mahon M-Floor Section, the architect assured himself, and his client, that the building would have adequate underfloor raceway capacity to meet requirements of any type of occupancy, and that it would remain electrically competitive in the rental market throughout its entire life.

The 6" wide Cel-Beam Raceways in M-Floor construction provide further electrical advantages... they allow greater latitude in the location and installation of Floor Service Fittings, and they permit the use of 4" diameter Hand-holes between Header Duct Access Units and the Cel-Beam Raceways. This is important... the larger access hand-holes save time and labor costs, not only in the initial electrical installation, but year after year, whenever changes in electrical circuits are required or additional circuits become necessary.

In the M-Floor Cel-Beam Section you get a better balanced, more efficient structural unit . . . you get electrical availability in every square foot of floor surface . . . you get greater raceway capacity, greater latitude in location of floor service fittings, and greater convenience, electrically, for the life of the building.

When you select a Cellular Steel Sub-Floor for your next building, you will want all of the structural and electrical advantages that have been engineered into Mahon M-Floors. Comparison will convince you that the basic functional requisites of a Cellular Steel Sub-Floor are more fully realized in the design of Mahon M-Floor Cel-Beam Sections.

See Sweet's Files for information, or write for Catalogue M-57.

THE R. C. MAHON COMPANY • Detroit 34, Michigan Sales-Engineering Offices in Detroit, New York and Chicago Representatives in all Principal Cities

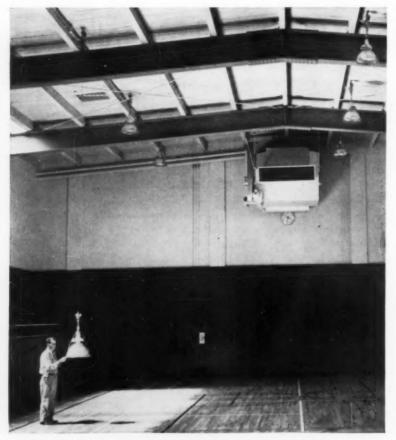
# MAHON



SECTION M2-7.5







# UNLESS YOUR MAINTENANCE MEN ARE 30 FEET TALL . . . YOU NEED THOMPSON HANGERS!

It's no secret! Servicing fixed position high-bay luminaires is difficult, hazardous and costly. Relamping one fixture mounted 20 feet or more above the floor normally involves erecting scaffolds or ladders . . . two or three men . . . about one hour's time. And because the fixture is "hot", one man must be a skilled electrician.

BUT . . . when high-bay lights are equipped with THOMPSON HANGERS, the job is fast, safe, easy. One unskilled man can relamp and clean a light . . . whenever necessary . . . in an average of 5 minutes! All work is accomplished at floor level with a "dead" fixture. No climbing hazards, electrical dangers or assistance are necessary for fast efficient servicing.

No matter how you figure it, if you want long range economy and peak lighting efficiency . . . THOMPSON HANGERS are your best buy.

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THE THOMPSON ELECTRIC COMPANY
P. O. BOX 873 — C . CLEVELAND 22, OHIO

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#### PRODUCT REPORTS



**Exterior Wall Components** 

A recently introduced load bearing panel system is said to eliminate leveling. squaring and shimming of doors and windows; measuring, cutting, and installing of headers, cripples, studs, plates and bucks. An integral part of the structural wall, the load bearing window, door, and closed panels offer a new potential for design flexibility and economical all-weather building. Panel widths are 32, 48, 64, 96, and 144 inches. outside measurement. Panel heights are all 7 feet 11% inches outside measurement. All that is required of the builder is the top plate to tie the panels together for an overall height of 8 feet 11/2 inches. Modular Building Components, 7208 Douglas Foad, Toledo, Ohio.

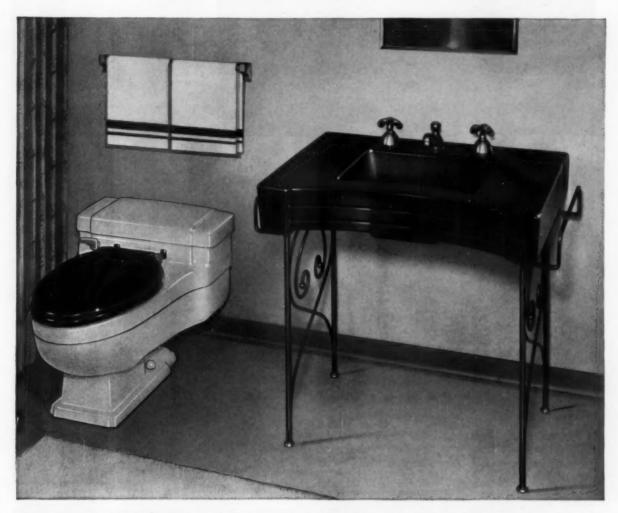


**Prefinished Plywood Paneling** 

Plywall, a new type of prefinished wood paneling, is reported to give the appearance of genuine hand-rubbed hardwood at about half its cost Essentially a plywood material, Plywall is finished with a natural wood grain effect transferred to the panels through a photographic process, without the use of paper or plastic laminations. The panels are maintained in the same way as genuine hardwood. Eight finishes in grooved, random plank or plain panels are presently available, with four additional finishes scheduled for production by the end of the year. Plywall Products Co., Inc., Dept. PR-1, P. O. Box 625, Fort Wayne, Ind.

(More Products on page 298)

# Right Combination FOR SALE AFTER SALE!



#### PRODUCED IN 41 DECORATOR COLORS PLUS SPARKLING BLACK AND WHITE

Here is the most wanted, therefore most *profitable* bathroom fixture combination you can offer. The industry's first Concave Lavatory\* plus the famous Case Non-Overflow One-piece\*\* Water Closet with the whispering flush.

The Case Wellington\*\*\* 300 Lavatory is the most wanted because it's the first really comfortable lavatory ever made for men and women. Gracefully curved for comfort and unusual beauty. Extraspacious, wide, flat deck. Shown with art-designed wrought iron legs and towel bars all in one piece.

Legs supplied in decorator colors and sparkling black and gold. You already know the Case One-Piece Water Closet and its customerwinning features like non-



overflow bowl; safeguarding anti-syphon ballcock; pressurized cleansing rim flush; large water area; healthful seat height; time tested, with streamlined design in 41 colors and black and white. Ask your Case wholesaler or distributor or write:

\*Available with Wrought Iron or Chrome Legs

\*\*Patented

\*\*\*Patent Pending

#### CASE MANUFACTURING CORPORATION

33 MAIN STREET, BUFFALO 3, NEW YORK

#### This...



#### instead of this



#### High bay lighting with Abolite is easier on the eyes

• In high bay lighting, Abolite open-top units eliminate uncomfortable contrast of bright lamps against dark background. 18% of the light is directed upward through Abolite's open top, washes out the deep shadows, gives lamps a soft background. 35° shielding of the lamp practically eliminates glare.

Open-top design also gives Abolite high bay units a selfcleaning action. Air circulates through the fixture, sweeps the reflecting surface clean, reduces lamp operating temperatures. As a result, lighting efficiency remains high, lamps last longer.

There are three Abolite uplight units for high bay lighting: 18" and 24" diameter Alzak fixtures for use with 400 and 1000 watt mercury lamps and 18" Alzak fixtures for 500 watt incandescent lamps (ideal for gymnasium lighting). For full details, write Abolite Lighting Division, The Jones Metal Products Co., West Lafayette, Ohio.



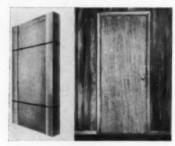


#### PRODUCT REPORTS



Off-the-Floor-Kitchen Cabinets

The contemporary trend to lightness of feeling in both architecture and home furnishings is echoed in a new line of kitchen cabinets which "float" on a base pedestal 101/8 or 161/8 inches high. To complete kitchen work centers, appliances such as dishwashers and built-in ovens may be placed on the pedestals along with the cabinets, and storage space lost through the raising of the base cabinets may be regained at a more convenient height by using taller units or full-height storage walls. Steel cabinets in various heights and widths, and in sixteen colors may be had with flush wood doors in several birch finishes, or with matching steel doors. St. Charles Mfg. Co., St. Charles, Ill.



Door and Jamb Unit

According to the manufacturer, the new Made-Ready door and jamb unit can be completely installed in 15 minutes. Shipped completely assembled, the two jamb halves, one with prehung flush door, are quickly and accurately aligned because of special masonite guide strips that are set into jamb grooves. The jamb is constructed to adjust easily to different wall thicknesses. Mitre separation is eliminated with "clamp nail" wood joint fasteners tightly securing all corners of the unit. Complete with locks and butts. the unit is available in two grades and a variety of sizes, and can be ordered with different styles of trim for either right or left hand doors in attractive woods. Made-Ready Door Unit Corp. 557 Brook Street, Garden City, L. I., N. Y.

(More Products on page 302)



comes this superior

Jew Chalkboard

# PERMASTEEL

A porcelain enamel chalkboard consisting of a hard vitreous material fused, at controlled heat of 1500° F, into 18 gauge enameling sheet steel in accordance with Performance Specifications for Porcelain Enamel Chalkboards.

PERMASTEEL Chalkboard has a surface that is textured to give the right "bite" for excellent chalk marking. The surface is colored in Rowles scientifically prepared See-GREEN for easy reading and minimum eyestrain. See-GREEN will not shine or fade, even after years of use. PERMASTEEL erases clean and is easy to maintain as only periodic washing is required. The writing surface is rock-hard and resists wear, shock and abrasion; will not crack, dent or shatter under normal classroom use.

Magnets can be used to hang papers and other objects on PERMASTEEL.



#### **ROWLES TRIM FOR PERFECT INSTALLATIONS**

Rowles extruded aluminum trim and chalk troughs are attractively styled and are designed to help simplify chalk-board installation. All Rowles moldings have a satin finish and are anodized to prevent fingerprint marks,

discoloration and tarnishing.

In addition to PERMASTEEL, there are five other quality chalkboards in the Rowles line. They are: ENDURAROC, DURABEST, PERMASITE, SUPER PERMASITE and DUROPLATE.

There is a Rowles chalkboard for every installation — every budget.

For specifications and other details on PERMASTEEL and other Rowles chalkboards, contact your Rowles Franchised Dealer or fill in coupon and mail.

112 M. Hickory St., Arling	grow trongma, mo
Please send me:	
	Ifications of PERMASTEEL.
Samples of other	Rowles chalkboards.
Hame of nearest it	towles Franchised Dealer.
	Rowles Franchised Dealer.
☐ Name of nearest # Name Address	Rowles Franchised Dealer.

School Equipment

#### E. W. A. ROWLES COMPANY

112 N. Hickory Street • Arlington Heights, Illinois
Manufacturers of quality school equipment since 1896















#### RESEARCH DATA RELEASED BY DUR-D-WAL

#### Independent Study Now Available to Industry

In an effort to obtain pertinent information as to how joint reinforcing actually affects the strength of masonry construction, Dur-O-waL sponsored a program of research carried on by the Research Foundation of the University of Toledo in 1956.

A total of 39 walls, 9'-4" x 4' were built and tested. More than two dozen tension tests were made on plain and deformed wires; 80 pull-out tests were made to determine bond characteristics.

#### **Guide for Comparison**

Three points of importance in comparing quality —

- 1. Weight of material
- Comparison of actual weight per 1000 lineal feet.
- b. Flexural strength in relation to weight of steel in wall.
- 2. Deformation a. Report of tests

3. Mortar Locks

a. Report of comparative tests

You are invited to send for your copy of the research findings to learn how this truss design member provides superior lateral and horizontal reinforcing.

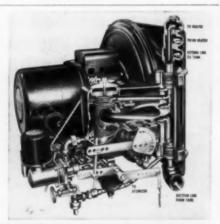
#### Manufacturing and Distributing Facilities

More than 8,000 dealers stock Dur-O-waL, which is distributed in key markets throughout the United States. It is readily available in your area now.

Dur-O-wal is manufactured by the Dur-O-wal Division, Cedar Rapids Block Company, Cedar Rapids, Iowa; Dur-O-wal Products, Inc., Box 628, Syracuse, N.Y.; Dur-O-wal of Illinois, 119 N. River Street, Aurora, Illinois; Dur-O-wal Products of Alabama, Inc., Box 5446, Birmingham, Alabama; Dur-O-wal Products, Inc, 4500 E. Lombard St., Baltimore, Md.; Dur-O-wal Div., Frontier Mfg. Co., Box 49, Phoenix, Ariz.; and Dur-O-wal, Inc., 165 Utah St., Toledo, Ohio.

Advertisement

#### JOHNSON Model 53



For

#### SURER, SMOOTHER "COLD STARTS" BETTER ALL-AROUND EFFICIENCY

This amazing new Johnson 53 virtually eliminates the problem of "Cold Starts" and varying Oil Viscosities. It's a masterpiece of advanced oil heat engineering. Metering Pump Control Quadrant provides calibrated reading of oil being burned. Make it a point to find out what it can do for you. There are 8 sizes from

25HP to 500HP with either Direct or Belt Drive. Combination Oil and Gas Models may be had. May we send you full details?

#### S. T. JOHNSON CO.

940 ARLINGTON AVE., OAKLAND 8, CAL. CHURCH ROAD, BRIDGEPORT, PA.

#### BREEZE CONDITIONING

Means Cool, Comfortable Classrooms

A breeze conditioned classroom assures warm weather comfort for students and teachers. Initial cost is less than 1% of average classroom cost and the cost of operation is less than 1¢ per hour. Illustrated below is one of Coolair's quiet, maintenance-free fans being specified in many new schools.



#### MODEL BW24

Ultra-quiet for classroom use.

Completely guarded. Companion
wall shutter. 2-speed motor.

Certified Rating of 5250 CFM.



THE COOLAIR LINE'S COMPLETE—write for full information and specifications or see Sweet's Architectural File: Sec. 29 (1957) or Sec. 30 (1958).

AMERICAN COOLAIR CORPORATION
P. O. Box 2300, Jacksonville 3, Florida





TECHNICAL DATA
ON SPACE-SAVING
KITCHEN UNITS

Architects and builders faced with the
problem of a maximum kitchen in a
minimum space
will find this manual an important
tool! Covers full
line of efficiency
units for builtin kitchens!

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perfectly expressed in Certified Dry California Redwood



CALIFORNIA REDWOOD ASSOCIATION

578 SACRAMENTO STREET . SAN FRANCISCO II, CALIFORNIA



#### PRODUCT REPORTS



#### **Patterned Concrete Masonry**

A new concrete masonry unit with a recessed pattern built into its surface provides the architect with a versatile tool for creating decorative wall treatments at low cost. The trapezoidal indentation formed by three-eighths inch angled recesses in the face of a modular (8 by 8 by 16 in.) concrete block lends itself to almost limitless combinations with other Shadowal units as well as standard modular blocks. Designed for use in exposed masonry construction, the new block has the physical characteristics of all concrete masonry. Although it requires no finishing, it may be painted or coated with transparent waterproofing. National Concrete Masonry Assoc., 38 S. Dearborn St., Chicago 3. Ill.



#### **Built-In Automatic Barbecue**

Outdoor cooking comes indoors with a new automatic broiler and grill that can be built into kitchen, den or patio. The unit comes with a 15 in. revolving aluminum griddle, a chrome plated grill and an electric spit for all types of "outdoor" broiling, grilling or barbecuing. Radiant heat for cooking is supplied by a bed of ceramic refractory "coals" that is brought to broiling temperature in only eight minutes by a 3800 Btu gas burner. A multiple-positioned safety control valve gives high, medium or low heat control. Well insulated on all sides, the Victor built-in barbecue can be installed in wood cabinets as well as built-in with brick or ceramic tile. Nelson Mfg. Corp., 1560 Victory Blvd., Glendale 1, Calif.

More Products on page 306)

HANLEY

FROM CLAY

.. TO COLOR

HANLEY Quality is unique and outstanding. It is achieved by rigid, scientific Quality Control, maintained from Clay to Kiln to Beautiful Color. Hanley possesses one of the nation's best shale deposits, but top grade raw material is merely the first step in Hanley Quality. Hanley's patented tunnel kilns provide constant color and quality control, and are your assurance of bricks that meet the most strict requirements.

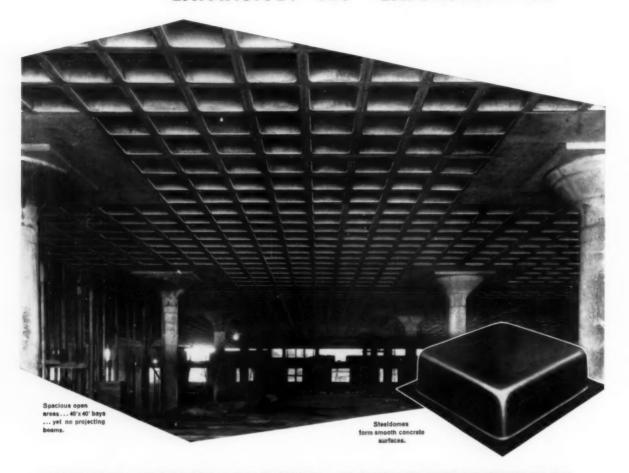


#### HANLEY COMPANY

DETROIT: 14976 Schaefer Highway



#### **EXPANSIVE?-YES EXPENSIVE?-NO**



#### **CECO STEELDOME CONSTRUCTION**

Wide 40' x 40' bays can be built with savings up to 30%

How to get wide open space in buildings and yet meet a budget is a problem faced by architects and structural engineers. This is difficult to achieve—but there is a solution—two-way slab construction formed with Ceco's new one-piece Steeldomes.

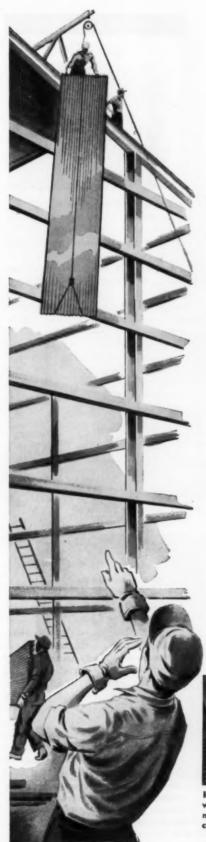
Employing this method, 40' x 40' bays supporting 150 lb./sq. ft. live load were built economically through the teamwork of Friedman, Alschuler & Sincere, architects-engineers, and contractor Wm. E. Schweitzer in constructing the plant and warehouse for Crescent Industries, Inc., Niles, Ill. A pilot study showed Ceco Steeldome construction was the most economical of all. Savings up to 30% were indicated.

Dome construction is essentially flat slab design with voids. The voids reduce deadload—the joists provide rigidity. Erection is fast and economical, on simple one-way open wood centering. With Steeldomes, the exposed waffle pattern presents a high-quality finish. Added to that, you get the advantages of wide open space and lower cost. On the Crescent project Ceco also supplied reinforcing steel and hollow-metal doors and frames. Ceco Steel Products Corporation. Sales offices, warehouse and fabricating plants in principal cities. General Offices: 5601 West 26th Street, Chicago 50, Illinois.



#### IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Steelforms / Concrete Reinforcing / Windows, Screens / Hollow-Metal Doors / Metal Lath / Steel Joists / Roofing Products



#### ACP Architectural Alodine

PROCESS FOR ALUMINUM

PROTECTIVE . DECORATIVE . GLARE-REDUCING

Architectural Alodine is protective because it further improves the good weathering characteristics of aluminum. It provides unusually effective protection at the seaside and in industrial areas. Architectural Alodine is decorative because it chemically forms an attractive green color which enhances the appearance of the aluminum. The coating formed is integral with the metal and the color is sunfast. Architectural Alodine is glare-reducing because the chemically formed coating materially reduces the natural reflectivity of aluminum. And the process is inexpensive, compared to other commercial finishes. Write for samples of aluminum which has been Architectural Alodine treated—no obligation.

#### AMERICAN CHEMICAL PAINT COMPANY Ambler 22, Pa.

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CHEMICALS

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New Chemical Horizons for Industry and Agriculture



industrial roofing, too, can be treated with ACP Architectural Alodine to protect the metal and give the appearance of weathered copper or assume a soft, mellow sea-green.



INDUSTRIAL SIDING is another product used in building construction which can be treated with ACP Architectural Alodine to beautify it and protect it.

#### Before you buy any boiler

#### compare quoted prices with **REAL COSTS**



#### New Cleaver-Brooks cost analyzer clears "quotation" confusion — reveals ALL costs

Get all the costs...the real costs...down on paper before you recommend or specify a boiler to your clients. On many boiler installations "quoted prices" seldom agree with the total costs, as you may have learned. This is frequently the case with so-called "built-up" boilers assembled on the site.

Cleaver-Brooks' cost analysis enables you to compare all material costs (boiler, steam trim, burner, refractory, controls and other equipment) and installation labor costs. You'll know the "real costs" on the complete installation before you start.

#### Real eye-opener

The figures you'll see may be startling. In most cases the cost analysis proves a Cleaver-Brooks costs less. On-job time is dras-

tically reduced because Cleaver-Brooks packaged units are fully assembled, ready to install. Cleaver-Brooks boilers give you more in performance, too . . . each boiler is fully fire-tested at the factory under load, tuned to peak economy. Starting service and on-the-job operator training by authorized field engineers further decreases your over-all costs.

#### Contact your Cleaver-Brooks agent

Once you add up all the benefits of a Cleaver-Brooks "one-cost" package... the proved trouble-free economy of exclusive four-pass, forced-draft design, you'll find it pays over and over to analyze costs carefully before you buy. See your Cleaver-Brooks agent for details or write Cleaver-Brooks Company, 362 East Keefe Avenue, Milwaukee 12, Wisconsin, Dept. L.



Choose from 19 sizes, 130 models, 15 to 600 hp. Oil, gas and combination oil/gas fired — steam or hot water for heating or processing.



ORIGINATORS OF SELF-CONTAINED BOILERS

#### PRODUCT REPORTS



#### Modular Storage Walls

Wonderwall, a flexible group of modular storage units for use as space dividers or furniture, lend themselves to individual use or to grouping in a variety of arrangements to meet specific storage needs. Open-shelf, closed-shelf, pegboard-backed wardrobe and drawer type units are constructed of hardwood with a butternut finish, and can be grouped or re-grouped without cutting. fitting or finishing. In addition, nine of the fifteen basic units have two-side utility, providing maximum storage space within minimum room space. I-XL Furniture Co., 67 W. Division St., Chicago 10, Ill.



#### Wall Table and Benches

The problem of providing easily stowedaway dining facilities in multi-use areas of schools and similar buildings is solved by a new lunchtable with benches which unfold from a surface-mounted or recessed wall cabinet. Accommodating up to 24 school children, the tables are 14 ft long and 30 in. wide, while the benches are 12 in. wide. Both tables and benches are surfaced with a high pressure plastic laminate with sanitary edge molding, and have a steel understructure. For maximum flexibility in use, the tables and benches may be detached from the cabinet and used either together or separately in any desired room arrangement. Haldeman-Homme Mfg. Co., 2580 University Ave., St. Paul 14, Minn.

(More Products on page 310)

#### **Supreme Court Building**

Brooklyn, N. Y.

Architects

Builders

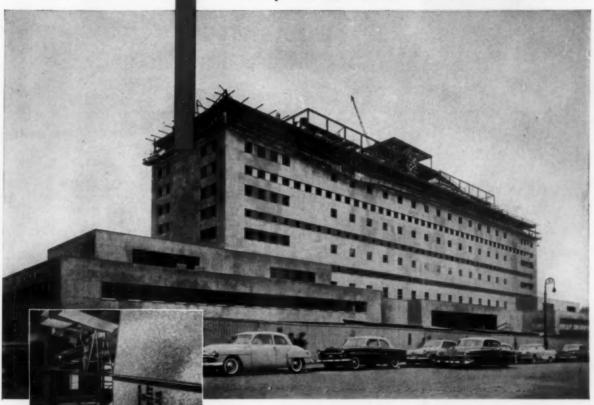
Contractors

Duct-work

Shreve, Lamb & Harmon Associates
— for the Department of Public Works
The City of New York

Castagna & Son Inc. and H. R. H. Construction Co. Alpine Sheet Metal & Ventilating Co., Inc.

Wheeling sorTite' cop-RLOY' Galvanized Sheets



Ductile, tight-coated sof litte Cop-R-Loy is ideal for long spans.



Ducts made of SOFTITE Cop-R-Lov form quickly without preliminary cutting.



SOFTITE Cop-R-Loy joins easily without shearing waste.

In about October 1958, the new \$20 million Supreme Court Building in Brooklyn, N. Y., will be completed. In it you will find more than 365 tons of air conditioning, heating and ventilating ducts made of Wheeling sofTITE Cop-R-Loy Galvanized Sheets.

In addition to meeting the strict requirements of New York City's Dept. of Public Works, sofTITE Cop-R-Loy permitted the fabricators to quickly form the duct work without preliminary cutting and joined easily without shearing waste. And by choosing sofTITE Cop-R-Loy, the builders were assured of the ultimate in long lasting galvanized air conditioning ducts.

The full line of Wheeling building materials includes Steelcrete Reinforcing Mesh, Ex M Gratings and Angle Frame Partitions,

Tri-Rib Steel Roof Deck, Metal Lath and Lath Accessories, and SOFTITE Cop-R-Loy Galvanized Sheets.

For full details contact the Wheeling warehouse or sales office nearest you.

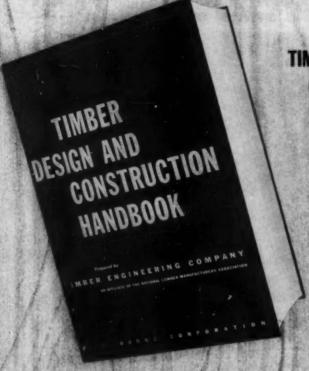


WHEELING CORRUGATING COMPANY, WHEELING, W. VA.

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#### TIMBER DESIGN AND CONSTRUCTION HANDBOOK

Prepared by Timber Engineering Company, engineering and research affiliate of the National Lumber Manufacturers Association.

Timber Design and Construction Handbook is truly indispensable to anyone concerned with wood design and construction. Serves two definite purposes: It is a comprehensive timber design reference, and it is also an extremely practical field handbook. Offers every piece of essential information needed to develop and construct the best, most economical wood structures.

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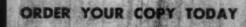
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In preparing this vital new work, 25 leading specialists of recognized professional ability in lumber, wood products and allied industries have contributed their experience, working as authors, advisors and editors. A special 9-member editorial committee, which included staff members of the Timber Engineering Company, exhaustively reviewed and edited the material into the eminently practical form in which it appears in this book.

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#### "Tough-Nut" Illumination Problems Solved by Sunbeam Lighting!

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DV3600-M7 2' x 4' Visionaires,
recessed in suspended ceiling.
For high level comfortable illumination

recessed in suspended th level, comfortable illu

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SUNIA SUNBI



with Sunbeam Lighting's MSDP3800 4' x 4' large area, recessed, Plexiglas-shielded units Architecturally integrated to enhance interior decor



with Sunbeam Lighting's HL3800 Series, large area, louvered, recessed Visionaires. High intensity, low brightness illumination. Balanced—for merchandise sales appeal.



multi-level commercial garage with Sunbeam Lighting's 1901 Series open-type "antenna guard" Visionaires. Staggered-pattern installed for optimum general illumination



with Sunbeam Lighting's 1100 Series, all-metal, luminous indirect, minimum-maintenance Visionaire For demanding visual tasks.

Want the Full Story? Request Bulletins ZZ-10/1.



SUNBEAM LIGHTING COMPANY, 777 EAST FOURTEENTH PLACE, LOS ANGELES 21, CALIFORNIA SUNBEAM LIGHTING CO., INC., 3840 GEORGIA STREET, GARY, INDIANA

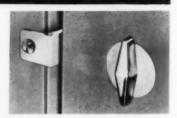
BETTER LIGHTING FOR BETTER VISION WITH VISIONAIRE LIGHTING FIXTURES



Severest vibrations have no effect on the holding power of a *Red Head* because of its full dovetail expansion. It can't pull out, rust out, melt out or vibrate loose. No expensive drills or explosive charges needed . . . every *Red Head drills its own hole!* Costs less installed than any other type concrete fastener, too. We can demonstrate this at your job site. Write for descriptive, illustrated catalog and free sample

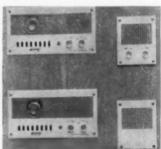


#### PRODUCT REPORTS



#### Concealed Toilet Partition Latch

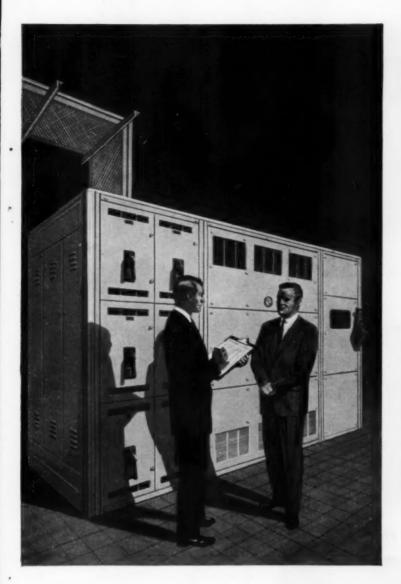
The newly developed Type 8800 door latch, now available on all Sanymetal toilet compartments, tucks its simple cam-action mechanism away inside the door, leaving only an escutcheon plate and diamond-shaped operating handle exposed to public view. For a cleaner appearance - and easier cleaning escutcheons for both face plate and handle are recessed flush with the face of the door. All parts are heavy-duty hardware, with exposed parts chrome plated for lasting luster. Because the concealed mechanism is installed at the factory. the mortised face plate, and the keeper and doorstop, can be field-installed in only one-fifth the time required for conventional slide latches. Sanvmetal Products Co., Inc., 1689 Urbana Rd., Cleveland 12, Ohio.

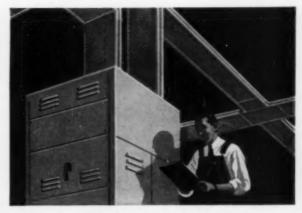


#### Home Radio-Intercom Systems

A new line of home radio-intercommunication systems incorporates several distinctive features. Built-in wall mounted systems with sandtone vinyl plastic and copper panels and clear lucite control knobs are available in two models: the Harmony Model 32 with AM radio, and the Harmony Model 46 with AM-FM radio. Each basic system consists of one master station, three remote room stations, and one remote door station. Wiring and two extra switches are included at the master station so that the customer may add extra remote stations making up to a total seven-station system. Facilities are also included for attaching phonographs or tape recorders. Continental Manufacturing, Inc., 1612 California Street, Omaha, Nebraska.

(More Products on page 314)





Exclusive Lo-X Scarf-lap Construction provides rigidity and strength. Tailored lengths overlap and bolt together easily. Elbows, tees and cross sections permit installation to fit specific plant layouts.



The BullDog field engineer stands ready with the detailed information you and your plant engineers may need to plan an efficient power network for new or existing facilities. Take advantage of his know-how in your planning.

#### Aluminum Lo-X-low-cost key to electrical efficiency!

Leading industrial plants everywhere are using BullDog aluminum Lo-X feeder duct as a vital part of their electrical distribution systems. Invariably—this leads to increased electrical efficiency and savings right down the line.

First savings come with the initial investment in space-saving Lo-X BUStribution® duct! The lightweight, prefabricated aluminum sections cost less to buy—less to install. Next, current-carrying costs are the lowest possible... maintenance is reduced to almost nothing. Finally, reusable Lo-X can be relocated without loss if needs change. Consult your BullDog field engineer—see how a complete BullDog system, from safety switches to unit substations, can be your key to real electrical efficiency and economy.

BullDag Electric Products Company, Detroit 32, Michigan • A Division of I-T-E Circuit Breaker Company • Export Division: 13 East 40th St., New York 16, N. Y. • In Canada. BullDag Electric Products Company (Canada), Ltd., 80 Clayson Rd., Taronto 15, Ontario.



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# New Doors of LIFETIME ALUMINUM

#### for Commercial and Industrial Buildings

Almost Maintenance-Free – Aluminum Designs Blend with Modern Planning

Now . . . magnificent doors of lifetime aluminum, built to your own specifications, can add functional beauty to the buildings that take shape from your plans! Constructed in the same time-saving, money-saving way\* as the new Panoramic Door that has taken industry by storm, The "Overhead Door" in lifetime aluminum has narrower stiles and rails, yet is far stronger than ever before. These doors weigh approximately the same

as wood doors. Slightly greater initial cost is offset by the savings in maintenance! The gleaming anodized finish, inside and out, is permanent—never needs paint. Keyway construction permits easy replacement of components if damaged. For details of construction, sizes, special features, see pages 38-39, Sweet's Architectural Catalog  $\frac{16i}{Ov}$  or write us for 56-page hard-bound catalog with traceable drawings.

\*Patents Pending



OVERHEAD DOOR CORPORATION, Hartford City, Indiana

Manufacturing Divisions: Hillside, N. J.; Nashua, N. H.; Cortland, 'N. Y.; Lewistown, Pennsylvania; Dallas, Texas; Portland, Oregon.

For 36 Years . . . Architects Have Specified The "OVERHEAD DOOR" More Than Any Other Brand!



New Panonamic Aluminum Door—handsome, maintenance-free, weathertight—blends beautifully with modern design—was an instant hit with the oil industry. Gives attendants full vision of traffic, parking areas and pumps.

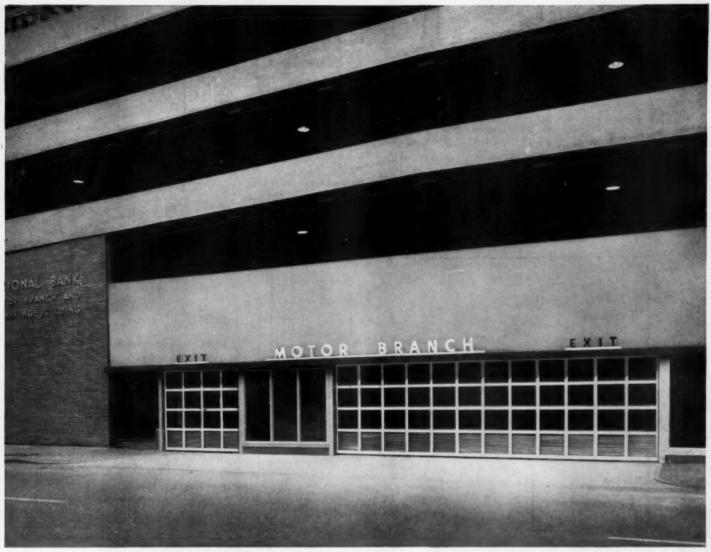
1957 A. I. A. Prize-Winning Design—Middlesex Mutual Trust Building at Waltham, Massachusetts, uses this special flush aluminum "Overhead Door."Door shown opens into the receiving room of the insurance company's office building. Another door is in the basement garage.

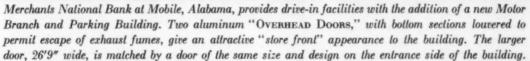


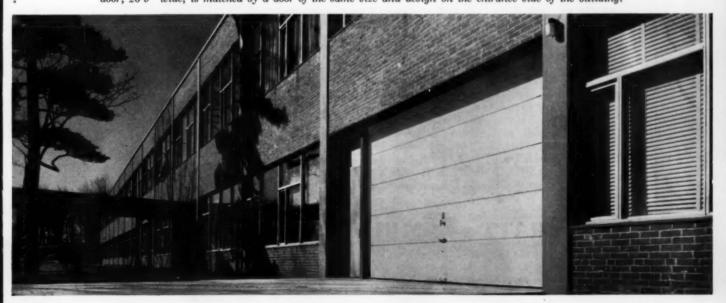
Architectural

16i

© 1957, O. D. C.







#### PRODUCT REPORTS

#### Convertible Nurses' Call System

The Vokalcall audio-visual nurses' call system features bedside stations which can be easily converted to meet changed requirements of patients, thus adding greatly to the flexibility of the system. By simply removing one cord set and plugging in another, stations can be converted to serve two adjacent beds instead of one, or vice versa; to require nurses to go to patient's bedside to cancel call signals rather than to cancel them at the nurses' station; and to serve patients under oxygen tents with-

out danger of explosion. Auth Electric Co., Inc., 34–20 Forty-fifth St., Long Island City 1, N. Y.



#### **Baseboard Heating System**

Because its glass element design requires less depth than conventional heating elements, the new Berko 650 watt baseboard heating system extends only 1¾ in. from the wall, without being recessed. A duplex electrical outlet section makes it possible to locate 120 volt

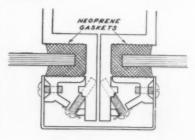
ADVANTAGES

receptacles at any desired point within the system, and a thermostat can be installed at either end of the run to control up to seven 650 watt heater units. Although the system is designed for use on outside walls, a corner section can be used to continue the raceway through a corner when heating units are required on more than one wall. Berko Electric Mfg. Corp., 212-40 Jamaica Ave., Queens Village 28, N. Y.



#### Low Cost Sealing System

The glass curtain wall enclosing the Arrivals Building at New York City's International Airport — said to be one of the largest single glass contracts in the history of the construction industry - has been made weathertight by a newly developed sealing system which eliminates caulking and provides an effective seal at a cost about half that of conventional top quality sealing methods. Through the combined efforts of architects Skidmore, Owings and Merrill, the DuPont Company, the Pawling Rubber Corp., and several glass companies, a special neoprene gasket with vulcanized corners was designed to fit around each pane of glass. Prefabricated to the architects' specifications, the gasket arrives at the construction site as a unit and is easily snapped around the pane by one workman. Pressure is then applied to the gasket by a movable stop, providing a uniform permanent seal between glass and frame. The possibility of breakage due to thermal expansion and contraction or heavy wind loads is reduced by the resiliency of the neoprene; but if the pane should break, the same aluminum frame and gasket can be re-used to replace the light. Pawling Rubber Co., Pawling, N. Y.



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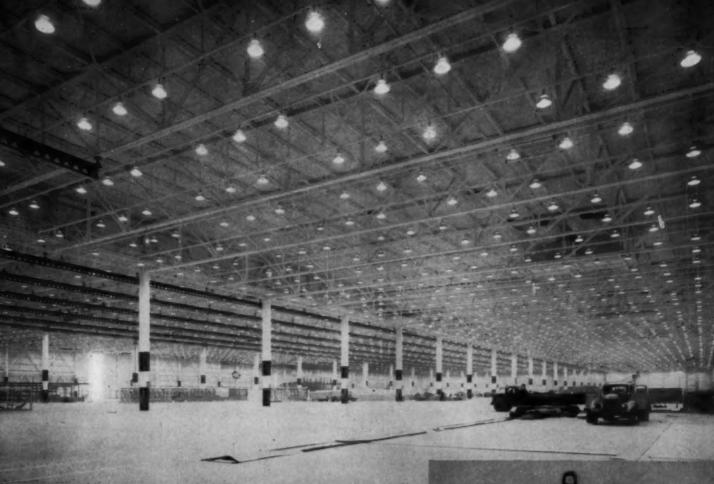
wanda Street, Buffalo 7, N. Y.—326 West 26th Street, Chicago 16, Ill.—254 Courtwright St., Fort Erie, Ont.



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Holophane luminaires had been used by Douglas for many years
...The decision to install them in this new plant
was another endorsement of Holophane lighting superiority.

Through research and development Holophane engineers are discovering new and better methods to meet the lighting problems of the nation's expanding industries. Chances are, they can help solve your problems, too. You may consult Holophane, through architects and engineers, without obligation.



Typical Holophane HIBAY Reflector



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# There's "Odea Potential"

#### in these Ceiling Materials for Schools



Today's materials must go beyond merely providing basic products for the architect to work with. They must suggest new directions for him to take in designing a project, toward economy, utility, and style.

That's why architects appreciate Acousti-Celotex Sound Conditioning materials. Through these versatile materials, a high degree of flexibility is possible in entire area layouts. Space above the ceiling is readily accessible, light fixtures and tile can be interchanged, partitions rearranged.

Celotex acoustical materials are available in an ever-widening range, designed to meet your diversified needs. In the planning stage of your next project, consult your Acousti-Celotex Distributor. Let him show you how his new products, plus his service and experience, can help you.

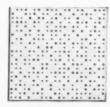
**FOR INFORMATION** and specification data on Celotex Acoustical Products and translucent panels, write The Celotex Corporation, 120 S. LaSalle St., Dept.B-107, Chicago 3, Illinois.



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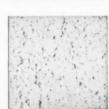
Products to Meet Every Sound Conditioning Problem . . . Every Building Code—The Colotex Corporation, 120 S. LaSalle St., Chicago 3, Ill. In Conada: Dominion Sound Equipments, Ltd., Montreal, Quebec



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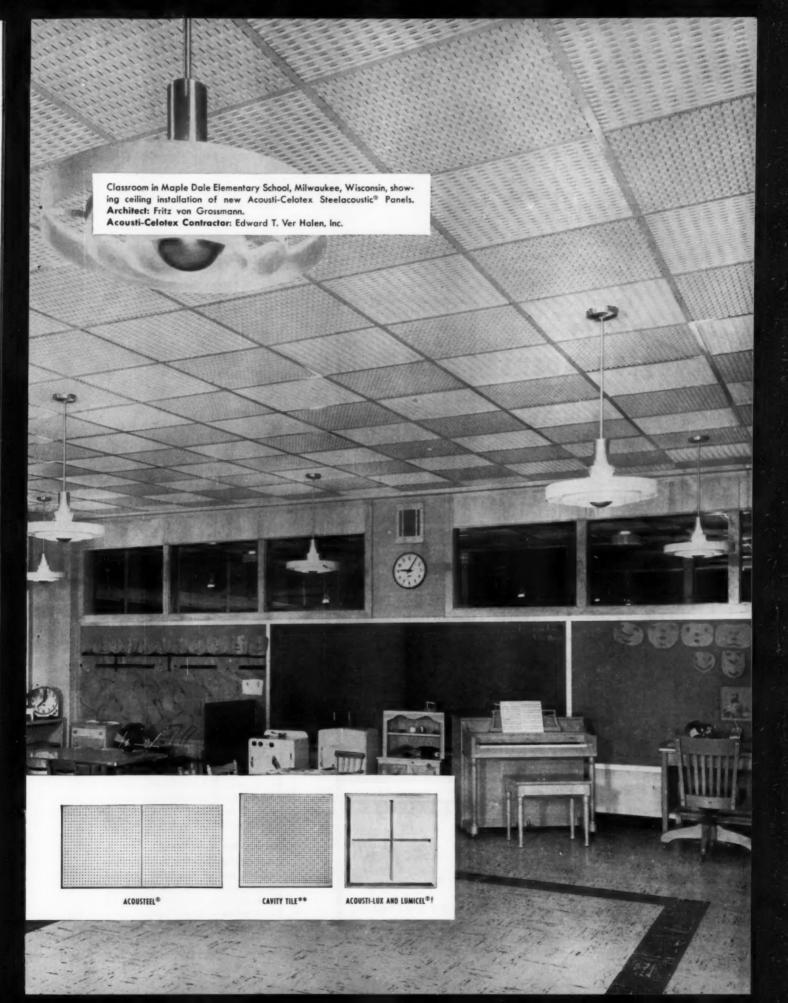


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#### LITERATURE

Catalogs • Brochures • Booklets

#### Wood: Colors and Kinds

Agricultural Booklet 101 contains fullcolor, natural size photographs of 32 common United States woods, with simple, nontechnical descriptions telling how to distinguish each species by color, grain markings and other characteristics shown in the photographs. A glossary of commonly used wood terms is included. 36 pp. 50¢. Supt. of Documents, Government Printing Office, Washington 25, D. C.

#### Western Red Cedar Lumber

. . . Grades and Uses illustrates various grades of Western red cedar. Information includes replicas of grade stamps, conversion tables, recommended nailing practices, and roof decking spans. 36 pp. West Coast Lumbermen's Assoc., 1410 S. W. Morrison, Portland 5, Oregon.

#### **Lighting Fixture Catalog**

Indexed catalog presents information on construction features, installation data, optical data and lighting charts for complete line of general-purpose and specialized lighting units. Kurl Versen Co., Englewood, N. J.\*

#### Plexiglas Dome Skylights (A.I.A. 12-J)

Brochure PL-301 illustrates available dome sky lights and accessories, and presents a guide to the calculation of their daylighting values. 20 pp. Rohm & Haas Co., Plastics Dept., Washington Sq., Philadelphia 5, Pa.\*

#### **Trane Products Catalog**

Revised catalog PB-290 contains photos and brief descriptions of Trane air conditioning, heating, ventilating and special heat transfer equipment for industrial, commercial and residential use. Tables of condensed performance data, and product capacities and styles are also included. 32 pp. Trane, La Crosse, Wisc.

#### Earthquake Resistant Design

Selected bibliography lists publications on seismology, magnitude and intensity of earthquakes, and engineering applications; as well as building codes, insurance codes and reference sources. American Institute of Steel Construction, 101 Park Ave., New York 17, N. Y.\*

#### **Packaged Air Conditioners**

(A.I.A. 30-F-2) Engineering catalog EMS-5715WCC gives technical information and selection data on eight models of packaged air conditioners with water-cooled condensers. 26 pp. Drayer-Hanson, 3301 Medford St., Los Angeles, Calif.

#### Dole Valve Catalog (A.I.A. 30-C-24)

Explains valve requirements of plumbing and heating systems, and describes operation and typical installations of complete line of valves. Bulletin PH58, 14 pp. *The Dole Valve Co.*, *Morton Grove*, *Ill*.

#### **Extended Area Lighting**

(A.I.A. 31-F-2) Bulletin LC-1 covers technical information and descriptive data on *Luma* illuminated ceiling systems. 12 pp. *Pittsburgh Reflector Co.*, 402 Oliver Bldg., *Pittsburgh* 22, *Pa.*\*

#### Tensioning Materials

. . . For Prestressed Concrete gives selection data and design information on wire and stranded products for tensioning prestressed concrete. 16 pp John A. Roebling's Sons Corp., Trenton 2, N. J.

#### Visualization Made Easier

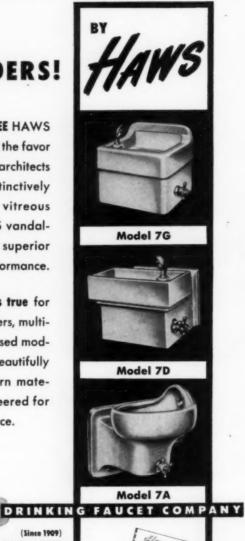
Color catalog describes and illustrates complete line of *Chart-Pak* pressure sensitive printed tapes, templates, workboards and other chart materials. 24 pp. *Chart-Pak*, *Inc.*, *Leeds*, *Mass*.

(More Literature on page 322)

# specify STYLE LEADERS!

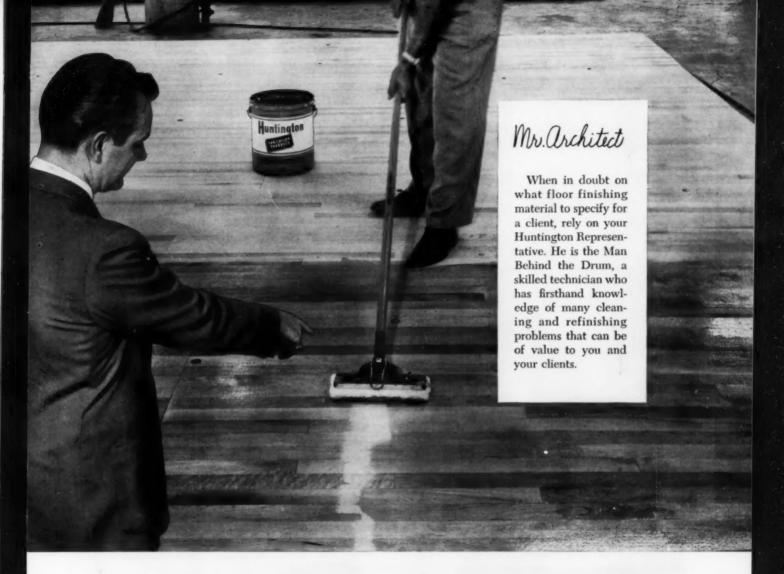
HERE ARE BUT THREE HAWS
Fountains that hold the favor
and confidence of architects
everywhere... distinctively
styled in durable vitreous
china, with HAWS vandalproof features for superior
sanitation and performance.

And the same holds true for electric water coolers, multiple fountains, recessed models ... all types ... beautifully styled in all modern materials ... and engineered for faultless performance.



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Get full information in the new 1957 BHAWS Catalog. Photos and detail drawings of hundreds of "style leader" fountains.



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When you specify Huntington Seal-O-San or any other Huntington floor finishing material, you can be assured that your client will have the finest floors possible. And here's why: Every Huntington Representative is a trained, skilled technician who knows exactly how and why to properly refinish wood floors to maintain the beauty you have designed in them.

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#### FIGURED GLASS MAKES





Used on all sides of these cheery offices of W. P. Fuller & Co., San Francisco, lustrous Mississippi Broadlite glass wraps them in a wall of living light . . . floods adjoining areas with richer, softer Illumination. Sliding doors of Broadlite complete the bright, modern look.

Architects: H. F. Everett & Associates. Contractor: Coopersmith Bros., Inc. Glazier: Pittsburgh Plate Glass Co.

Even the students farthest from the windows enjoy the benefits of conditioned daylight in the Quakerstown High School, Quakerstown, Pennsylvania. Installed in the upper two rows of sash, figured glass transmits eye-easy, natural illumination deep within the rooms. Note absence of sharp, shadows and harsh cantrasts.



W

D



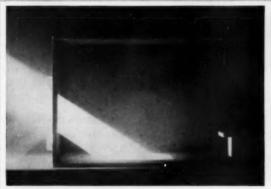
Architects: Smith, Powell & Morgridge

The property of light diffusion in figured glass is one of the most useful tools available to the architect and engineer. By its means rooms can be adequately daylighted far from windows, small skylight areas can cover a large expanse of floor with shadowless daylight, privacy can be secured, light can be controlled. Achieve better daylighting with translucent, light diffusing glass by Mississippi. Available through leading distributors in a wide variety of patterns and surface finishes to meet every requirement.

Installed in top hinged windows, heat absorbing, glare reducing glass floods this factory with conditioned daylight. Diffusing light deep into the plant, it reduces contrasts that tend to cause costly visual errors, absorbs up to 50% of solar heat rays to keep interiors more comfortable. Employees see better, feel better, work better.

Send for catalog 57-G.
Address Department 7.





CLEAR GLASS — Actual photograph of "smoke box room" with its window glazed with clear glass. Note high concentration of light near window.



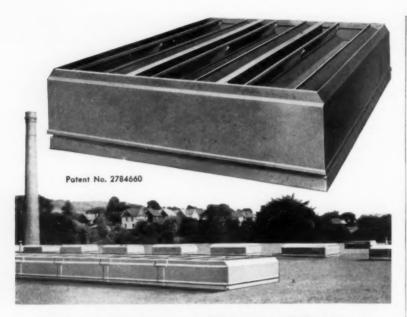
DIFFUSING GLASS—Smoke box photo—window glazed with diffusing glass. Note uniformity of lighting and its distribution to far side of room.

In these photographs the box is built to a scale of 1''=1' to represent a room 12' high, 12' wide and 24' deep. The "window", centered in one end, is 4' square, 3' above the floor.

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88 Angelica St. \* St. Louis 7, Mo.

BOLLED. FIGURED AND WIRED GLASS



#### Lower Contour, Higher Efficiency in roof ventilators, at Lower Cost with Swartwout's new

# Airmover

Nearly a foot lower than any roof ventilator previously offered, Contouramic Airmover follows the trend to neater roof appearance. But there's no sacrifice of efficiency! In fact, capacity is *increased* — and many other advantages follow:

With less bulk, there's less weight — less wind resistance — lower maintenance — lower first cost.

And automatic opening of dampers in case of fire is added as a standard feature.

Contouramic Airmover can be used in various ways: for "spot" ventilation over heat-producing operations; for safety ventilation above stages; and in runs or complete roof coverage to achieve large scale ventilation. And it's absolutely weatherproof.

Use this newest concept in roof ventilation on new buildings or for added relief on older ones.

Write today for Form 312-G.

THE SWARTWOUT COMPANY
18511 EUCLID AVENUE • CLEVELAND 12, OHIO

#### Swartwout ROOF VENTILATORS AND VENTILATING LOUVERS

ALSO AUTRONIC PROCESS CONTROL EQUIPMENT

#### OFFICE LITERATURE

#### Masonry Wall Reinforcement

(A.I.A. 10-C) Findings of research study include effectiveness of deformation of steel side rods, distribution of wall stresses, mortars, and results of design comparison and other related tests on masonry wall reinforcement. Dur-O-Wal Products, Inc., P. O. Box 89, Cedar Rapids 13, Iowa.\*

#### Non-Piercing Mechanical Fasterners

Catalog sheets contain design details and specification data on *GAT Dek-Clips* for attaching insulation to metal roof decks. *Geo. A. Tinnerman Corp.*, 19900 Detroit Rd., Cleveland 16, Ohio.

#### School Furniture

. . . And Auditorium Seating describes and presents color illustrations of complete line of school furniture. Heywood-Wakefield Co., One Park Ave., New York 16, N. Y.

#### Play Sculptures; A New World of Play

Describes and depicts a complete line of imaginative sculptured playground equipment in metal, fiberglass, cast stone and concrete. 32 pp. Creative Playthings, Inc., 5 University Place, New York 3, N. Y.

#### Steel Architectural Products

Illustrated catalog contains complete technical information on Stran-Steel's line of steel architectural products, with several pages of loading tables. Stran-Steel Corp., Detroit 29, Mich.\*

#### Stud Specifications

Includes technical information necessary for detailing and specifying Nelson standard end-welding studs. 38 pp. Nelson Stud Welding Div., Gregory Industries, Inc., Lorain, Ohio.\*

#### Combustible Contents in Buildings

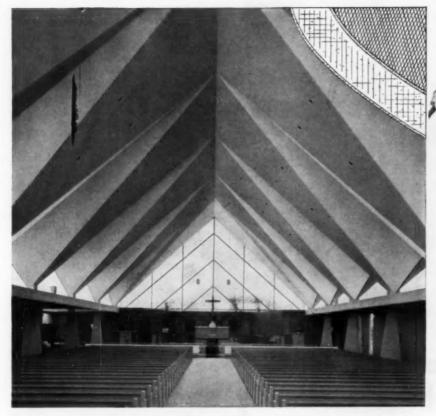
National Bureau of Standards Building Materials and Structures Report 149 contains data on the combustible content of various types of building occupancies. 18 pp. 20¢ Supt. of Documents, Government Printing Office, Washington 25, D. C.

#### Formica Idea Kit for Architects

Presents five folders on new developments on laminated plastics, including new patterns, applications and installation techniques. Formica Corp., 4614
Spring Grove Ave., Cincinnati 32, Ohio.\*

(More Literature on page 324)

# Design versatility with Gold Bond SPRAYOLITE





Cutaway shows Sprayolite applied to a basecoat of extra fibered plaster. The 3.4 Diamond Metal Lath is supported by 1½" channel iron. All building materials shown are by Gold Bond.

Immoculate Conception Church, Marroro, La. — Architect: Curtis & Davis, New Orleans, La. General Contractor: Gervais F. Favrot Co., Inc., New Orleans, La. Plastering Contractor: Sam Bird, Metarite, La.

### Spray-on acoustical plaster \*proves itself in contemporary Louisiana church

A reverent atmosphere for worship is created by a combination of many design elements including beauty, quiet and the utilization of natural light. Gold Bond Superwhite Acoustical Plaster helps to achieve this goal by permitting complete freedom of ceiling design. Sprayolite follows the most intricate contours. . dries to uniform color and texture... even with starting and stopping during application.

Sprayolite has exceptional bonding qualities, drying

rather than setting, to form a porous, sound-deadening surface with a .55 NRC rating. Its super-white color provides an unusually high light reflectance rating of 69%, so important in using natural light to the fullest.

Specify Gold Bond® Sprayolite...the acoustical plaster that sets no limits to your ceiling design. Consult Sweer's catalog, Section 12d/Na, or write National Gypsum Co., Dept. AR-107, Buffalo 2, N.Y.

SPRAYOLITE ACOUSTICAL PLASTER

NATIONAL GYPSUM COMPANY





#### ELECTRIC PLANT NEWS Chân





When power's off . . .

#### this electrical "appliance" protects home and family

Engine-driven Onan Electric Plant takes over automatically within seconds after power is interrupted

When highline power is off . . . for any reason . . . an Onan Emergency Plant supplies regular A.C. electricity for lights, refrigerator, freezer, furnace, water pump, electric stove . . . all other appliances and equipment. To protect the home even when occupants are not there, the plant can be equipped to start automatically when power is interrupted and stop when restored.

#### Install in garage or basement

An Onan Plant needs very little space. Vacu-Flo cooling assures a safe installation. The cost of an Onan Plant for the average home is about the same as a major appli-ance. Requires little attention; always ready to run.



In industry . . .

#### Mobile electric plants cut operating costs

Provide plug-in power for electric tools and lights anywhere! Save time and money. Models available which provide A.C. power for tools and lights and D.C. output to charge batteries for radio use. Eliminate high cost of running truck engine for battery charging.

500 to 75,000 watts A.C. Also D.C. and Battery Charging models

See our catalog in Sweet's or write for literature.

#### D. W. ONAN & SONS INC.

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#### OFFICE LITERATURE

#### Pipes, Fittings and Valves

Two-color catalog describes Alpha line of regular and high impact corrosionresistant rigid polyvinyl chloride pipe. Included are selection data, technical information and recommended installation procedure. 12 pp. Alpha Plastics Inc., 78 Okner Pkwy., Livingston, N. J.

#### Insulation Methods

Twelve page illustrated brochure describes proper methods of installing insulation in homes. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.\*

#### **Water Cooling Systems**

New 32-page brochure describes York single-stage turbo water cooling systems, with diagrams, charts, selection tables and engineering specifications. Advertising Mgr., Industrial Div., York Corp., York, Pa.

#### Floor Facts

Presents products and specifications for the original treatment and maintenance of all types of floors. 16 pp. Vestal, Inc., 4963 Manchester Ave., St. Louis 10, Mo.

#### **Architectural Letters**

Describes and gives specifications for cast aluminum and bronze architectural letters, and details simplified mounting methods. Spanjer Bros., Inc., 267 Mt. Pleasant Ave., Newark 4, N. J.\*

#### Metal Curtain Wall File (A.I.A. 17-A)

Gives details for Type CWA-2 metal curtain wall system in which snap-in stops form the framing profiles. Michaels Art Bronze Co., Inc., P. O. Box 668, Covington, Ky.\*

#### Architects' Sketch Book

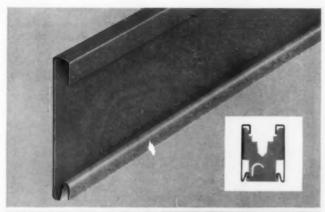
. . . of Lennox Comfort Curtain Applications shows installation ideas by R. C. Oversat, A. I. A., for integrating the new heating and ventilating system into school design. Lennox Industries, Inc., 1701 East Euclid St., Box 1356, Des Moines, Iowa.

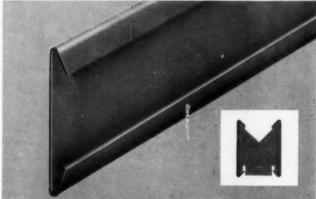
#### **American Standard Practice**

. . . For Protective Lighting discusses protective plant lighting, with information on outdoor lighting equipment and circuiting, and gives lighting specifications and recommendations for specific areas. 50¢. Publications Office, Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y.

(More Literature on page 326)

# For that CLEAN, MODERN look in <u>any</u> partition system specify a Gold Bond METAL BASE







#### SNAP-ON METAL BASE

Gold Bond's exclusive design of the base and attaching clips permits the fastest installation possible. This plastered-in flush type base is easily snapped into position and positively secured in one operation. Both top and bottom edges are locked, forming an accurate ground for plastering. Being extremely rigid, it is resistant to rough treatment which might weaken or damage plastered walls.

#### LOCK-ON METAL BASE

A plastered-in, flush type base that is permanently locked by a simple bending of the base clip into position. Installation is fast and it is easy to compensate for any uneven floor. Cutting and forming angles can easily be done right on the job. Completed sections give a finished trim that adds clean, modern lines to the entire wall.

Both Gold Bond® Metal Bases perform two important jobs. They form a good looking, durable base board trim and provide an accurate plaster ground in a single operation. For complete technical details, write Dept. AR-107, National Gypsum Company, Buffalo 2, New York.

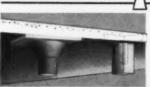
METAL LATH PRODUCTS

NATIONAL GYPSUM COMPANY



they'll wonder where the MUSHROOM went when you use





OLD "mushroom head" and drop panel . . . unsightly, expensive, out-of-date space-wasters . . . NEW Shiagro Shear Head . . . modern, economical space-savers!

Shlagro Shear Heads eliminate expensive mushroom heads and drop panels by allowing the steel to be completely imbedded in the floor slab, an important height-reducing advantage in single and multistory buildings.

Shlagro Shear Heads are:

economical - substantial savings in form work . . . better utilization of floor space!

time-savers — the integrating of the Shlagro Shear Head and a Shlagro or rolled column allows multi-story column erection in advance of lower floor slab pouring.

modern finished appearance — clean, sharp lines . . . flat uninterrupted surfaces with Shlagro Shear Heads.

When using Shlagro Shear Heads, you obtain freedom of design for conventional, unusual and daring projects . . . You'll appreciate the outstanding planning flexibility made possible by Shlagro Shear Heads, used with a reinforced concrete column, a rolled structural steel column, or the Shlagro Steel Square Column



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SHLAGRO STEEL PRODUCTS CORP.

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#### OFFICE LITERATURE

Swimming Pool Catalog (A.I.A. 35-F-2)

Catalog 57-A shows expanded line of swimming pool equipment, supplies and chemicals. 24 pp. Paragon Swimming Pool Co., Inc., 170 Ferris Ave., While Plains, N. Y.

#### Rilco Desk (A.I.A. 19-B-3)

Contains properties, allowable loads, heat gain and loss coefficients and upto-date specifications for cedar and spruce roof deck. 4 pp. Rilco Laminated Products, Inc., W-891 First National Bank Bldg., St. Paul 1, Minn.\*

#### Packaged Automatic Boilers

Bulletin 1245 describes and gives selection data for Powermaster oil and gas fired packaged automatic boilers, with illustrations and explanations of the boiler components. 24 pp. Orr & Sembower, Inc., Morgantown Rd., Reading,

#### High Temperature Hot Water

Engineering folder provides selection and application information on McDonnell controls for high temperature hot water installations. Diagrams and brief selection tables are included. 4 pp. McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18, Ill.\*

#### Hollow Metal Door Units (A.I.A. 16-A)

Presents specific information on door types and sizes, installation diagrams, and complete specifications for 134 in. hollow metal door units. 28 pp. Fenestra Inc., 2250 E. Grand Blvd., Detroit 11, Mich.

#### Office Furniture Catalog

Illustrated catalog describes features of Remington Rand's line of "Dream Office" furniture. 26 pp. Remington Rand Div., Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.

#### **Design Data Heating**

Contains engineering information for determining proper application and capacity requirements of unitary or central plant heating systems. 71 pp. Unit Heater Dept., Carrier Corp., Syracuse 1, N. Y.\*

#### Literature Requested

W. K. Miller, Architect; Bliss Alexander, Associate, Suite G, 1306 Hawthorne St., Houston 6, Texas.

John Diehl Associates, Architects, 40 Witherspoon St., Princeton, N. J.

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Christian High School Memorial Gymnesium, Grand Rapids, Mich Architect: James K. Haveman, Grand Rapids, Michi General Contractor: William DeVries, Grand Rapids, Mich

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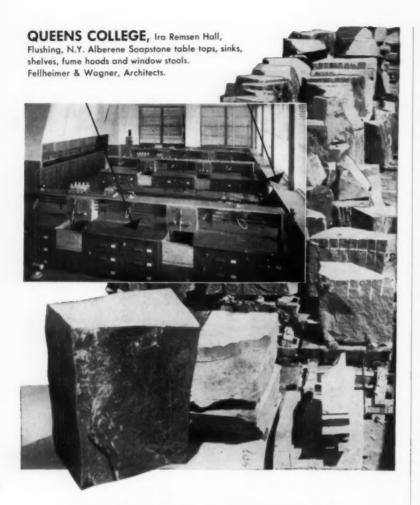
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#### THE RECORD REPORTS

#### DANISH ARCHITECTURE

(Continued from page 16)

unobtrusive people who seldom take the lead in pioneer ventures. On the other hand we have sometimes been successful in adapting and developing the new ideas which the pioneers have presented to the world.

"But though we are not cultural innovators, I think it can be justly claimed that the average cultural level in our country is a high one. Socially Denmark is not a country of strong contrasts; there are neither a great many poor people nor a great many rich ones. But we have a middle-class with a solid position both economically and culturally and this is particularly reflected in our houses. We own very few of the monuments of paramount worth in the history of architecture, but neither do we have any really wretched dwellings or real slums.

"To understand a foreign country's architecture it is essential to know something about the possibilities and limitations imposed by indigenous circumstances. Architecture is not an isolated branch of our culture but an integral part of our civilization. A country's economic foundations, its national heritage, and its access to raw materials are governing factors in its architecture. Therefore I wish to call attention to the following facts, which according to present-day conceptions, must be regarded as of essential importance to Danish architecture.

"The total area of Denmark is 16,576 square miles — that is to say it is smaller than all but eight of the states of the Union. It consists of the peninsula of Jutland, seven or eight larger islands, and hundreds of small ones, of which however only about one hundred are inhabited. The population is 4,400,000 with a density of 265 per sq mi, making it one of the most densely populated countries in Europe.

"Denmark is primarily an agricultural country though it has a large and growing industrial population. As it has practically no raw materials these must be imported and our industries are therefore refining and processing ones rather than basic industries. Our agriculture is based on small holdings, and the many small farms give the country a special 'homely' character not found in countries with large-scale agricultural holdings.

"Though our geographical location (Continued on page 334)



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# "Fenestra Steel Windows' No Painting feature alone saved us \$500 in only two years"

... says Riverside School Staff

Principal\*: "We are more than pleased with our Fenestra\* Intermediate Steel Windows. No maintenance work on them has been required in the two years we have occupied Riverside, nor have they warped or jammed.

"Keeping Fenestra Windows clean is an inside job all the way. Our maintenance man is able to wash the windowpanes inside and out while standing inside the school building. Windows are washed and polished 35% quicker.

"Lack of corrosion, alone, has saved us approximately \$500.00 because, normally, windows have to be painted every two years. There is no indication that the windows will require painting in the near future. "It is significant to us that the architect who designed our building has planned 14 others and specified Fenestra Steel Windows for all."

**Teacher\*:** "The windows in my classroom operate as easily now as they did two years ago. Opening and closing them is so easy, even the smallest of our students can handle them."

Librarian\*: "We are especially impressed with the excellent ventilation we're getting. Each window remains open at the angle selected—can be readily

adjusted to regulate the amount of air entering the room, and will not slip out of position."

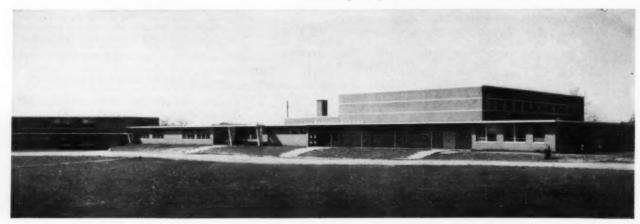
Fenestra Intermediate Steel Windows provide more and better daylight for school classrooms. Their slim, but strong, steel sections give you more glass area and clear-vision view per window opening. Fenestra Windows are engineered and precision built to be rigid and rugged without excess bulk. Sturdy hardware and steel-strong window members assure years of trouble-free service. Cleaning and screening are done safely and economically from the inside!

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For modern window beauty, for more daylighting and better ventilation, specify Fenestra Intermediate Steel Windows. Mail coupon, today, for complete information or call your local Fenestra representative—listed in the Yellow Pages.

\*Names upon request.





Riverside Elementary & High School, Pendleton, South Carolina, an outstanding example of modern, split-level school design. Contains 38,360 square feet. Capacity: 500 students. 170 Fenestra Intermediate Steel Windows, with their slim, steel members, contribute to the building's architectural beauty, give classrooms better daylighting and ventilation. Architect: John M. Lambert, Jr., A.I.A., Anderson, S. C. Contractor: Triangle Construction Co., Greenville, S. C.



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ve) Modern school using Wing Draft Inducer

(Below) Industrial Plant equipped with Wing Draft Inducers



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#### THE RECORD REPORTS

#### DANISH ARCHITECTURE

(Continued from page 330)

between 55°-58° latitude roughly corresponds to the southern part of Hudson Bay, the Danish climate is temperate but windy - a typical coast climate with mild winters and not altogether dependable weather. Often it changes from sunshine to rain several times a day. Denmark has no mountains whatsoever, the highest point above sea-level being about 573 feet. There are no longer any large forests but every farmhouse is sheltered from the wind by a group of trees, and cultivated woods, mostly of beech, dot the countryside.

'The wind, the rain, and the flat terrain have naturally influenced Danish building customs. Danish houses are low: they follow the gentle contours of the landscape and seek to escape the winds by keeping as close to the ground as possible. The traditional roof is a saddle roof with ample slope to carry off the rain. Such roofs are a still greater necessity in winter, for the snow which falls during the night, when the temperature hovers around freezing-point. melts as soon as the sun ascends the sky - and in the early afternoon the temperature is likely to return to freezing again. This continuous change from thaw to frost within intervals of only a few hours has a deteriorating effect on flat roof surfaces where water from melting snow is slow to drain off. At any rate in Denmark the modern flat roof demands special and expensive surface treatment. Lumber for building purposes is largely imported from our Scandinavian neighbors, Sweden and Finland. The building material that has characterized Danish architecture since the middle of the 12th century is fired clay, both as brick and roof tiling. Clay is found everywhere in Denmark and is processed locally at small or large brick-yards. Although Denmark has an extensive cement industry, and cement is one of our important exports, it has been difficult for reinforced concrete to compete with brick, partly because reinforced concrete construction demands a fairly heavy import of iron, and partly because in our type of low building reinforced concrete does not offer the same economic advantage that it does in high building. Naturally, circumstances are not as simple as I have sketched them here. Danish architectural styles are not solely determined by rain and wind and clay. Many distinctive and varied archi-



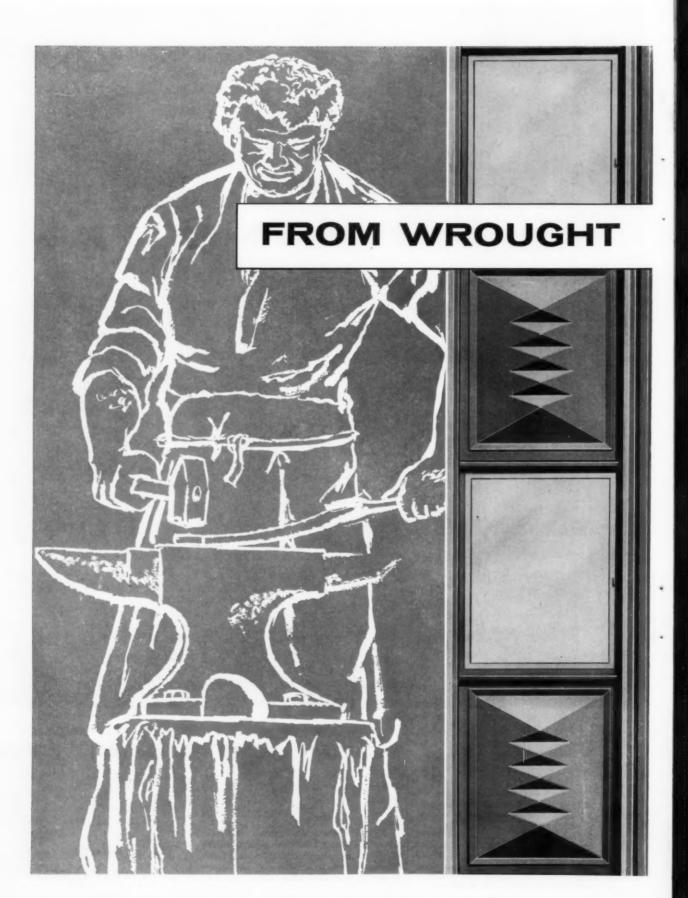
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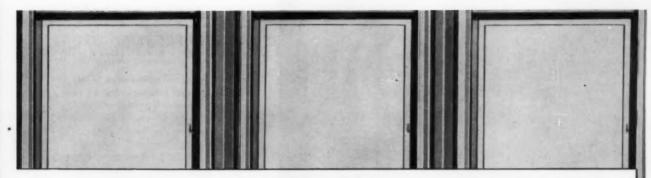
AUDIT TO THE

In cosmopolitan New York, Westinghouse operatorless elevators with magic Traffic Sentinel doors are ideally timed to the pace of busy buildings. At 530 Fifth Avenue where above photos were taken, for example, operatorless elevators go where they are needed, when they are needed—with Traffic Sentinel electronically taking over the courteous operation of the doors.

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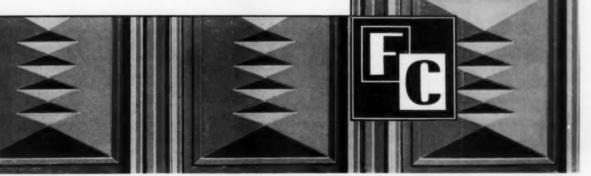
We, at FLOUR CITY, recognize the rich heritage left us by the art blacksmiths. Over the years, their experience and knowledge of the plastic possibilities of metals has been inherited by our new generation. Our metal fabricators of today, now aided by modern machinery, fit and assemble curtain walls for multi-story buildings with the same care and skill that has distinguished our products for the past sixty-five years.

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Obviously, the architect with an imaginative and creative design must rely upon skilled and experienced fabricators to assist him in advancing the frontiers of architecture. We, of course, cannot predict what the walls of tomorrow will be, but we can and do assure you... if those walls are made of metal, the finest will be fabricated by FLOUR CITY.

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# THE RECORD REPORTS DANISH ARCHITECTURE

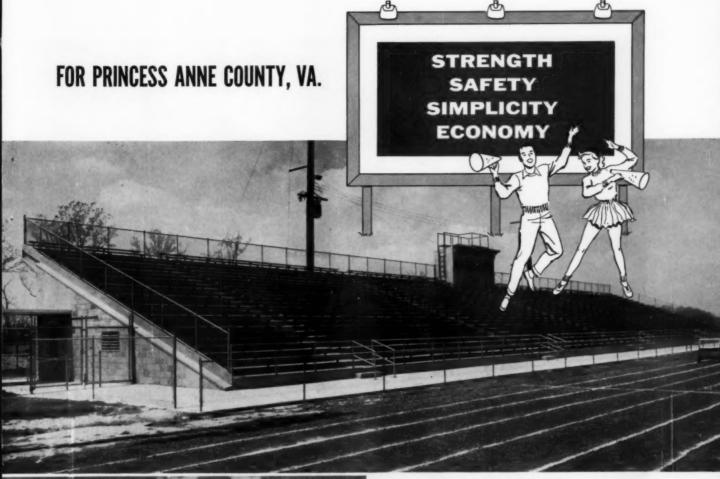
(Continued from page 334)

tectural trends have spread more or less violently through Denmark; but all of them have sooner or later been adjusted to the Danish conditions and temperament briefly described above. In Denmark it has been our good fortune to have a number of architects who, quietly and without official recognition indeed, even in opposition to the popular and dominating trends - have worked on a conception of architecture which reaches back to the essential characteristics of Danish building without ever resulting in carbon copies of antiquated external forms. This trend, like functionalism, strives for relationship between content and form. Because of their common aim these two conceptions have been able to grow and flourish side by side. They have developed under reciprocal influences and have drawn so near to each other that today it is often difficult to determine to which group a certain building belongs.

"Denmark today is not troubled by the violent conflict in concepts of architectural forms of expression which is rife in so many other countries. We do not have a tug-of-war between the two opposing camps — the modern school and the Beaux Arts school.

"In putting together this exhibition we have endeavored to give you a comprehensive impression of modern Danish architecture, laying particular stress on that which is especially characteristic of the present moment. I think I can say without exaggeration that Danish architecture is steadily advancing, but along a line not entirely independent of tradition, following trends that are adapted to the Danish environment and character; a sober and unpretentious architecture influenced by currents from the outer world but never forgetting its Danish heritage."

Architects whose work is shown in the exhibit are: Acton Bjorn, Jorgen Bo, Ebbe Clemmenson, Karen Clemmensen, Kay Fisker, Broge Glahn, Halldor Gunnlogsson, Ole Hagen, Knud Hallberg, Hans Hansen, Hans Chr. Hansen, Preben Hansen, Knud Peter Harboe, Ole Helweg, Povl Ernst Hoff, Arne Jacobsen, Gunnar Jensen, Ib Martin Jensen, Finn Juhl, Kaare Klint, Eva Koppel, Nils Koppel, Eske Kriestensen, Gunnar Krohn, Hans Erling Langkilde, Morgens Lassen, Vilh. Lauritzen, F. C. Lund, Ministry of Defense, Borge Mogen-sen, Finn Monies, C. F. Moller, Jorn Nielsen, Axel Olesen, T. Miland Petersen, Harald Plum, E. Hartvig Rasmussen, Frits Schlegel, Palle Suenson, Erik Chr Sorenson, Bertel Udsen, Hans J. Wegner, Bennet Windinge, Vilhelm





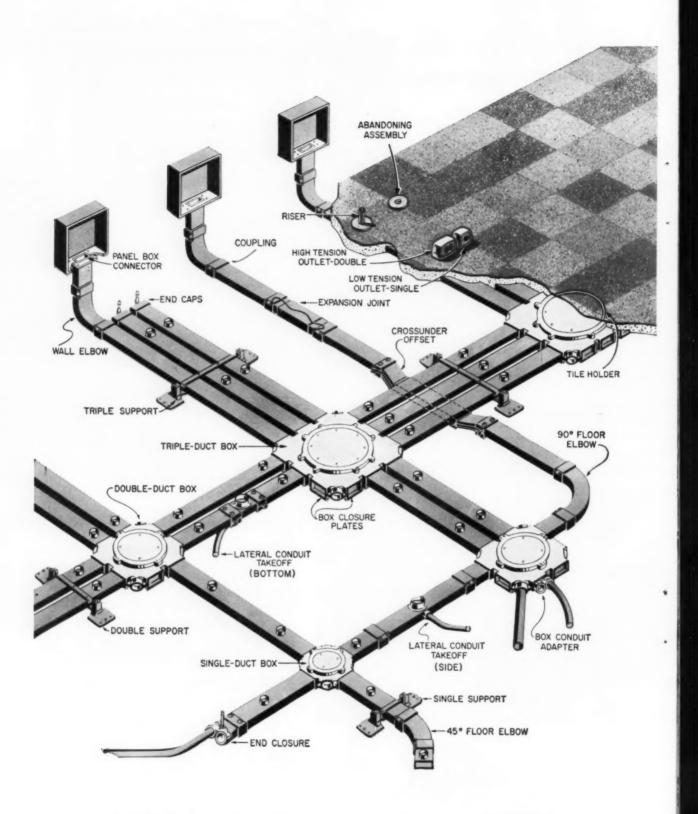




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General Electric's new single-level steel underfloor wiring system provides a low-cost but efficient means of handling both feed and branch circuits. The simple, flexible design permits installation under any conventional floor layout without special adaptations.



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according to the number of services needed.

All three General Electric steel underfloor wiring systems are listed by Underwriters' Laboratories, Inc.

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Consider these factors before choosing an underfloor wiring system for your next project: a. Can a standard floor layout handle feeding and distribution? b. Is the floor fill less than  $3\frac{1}{2}$  inches? c. Can a single-level system fulfill future wiring requirements?

If so, you should consider this new General Electric single-level steel system. But, if you have other power requirements, find out about G-E cellular-steel floor and two-level systems. Whatever your needs, General Electric's experience and complete product line can provide your best answer. Call your nearest General Electric Construction Materials district office or write Section C77-105, Construction Materials Division, General Electric Co., Bridgeport 2, Conn.

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#### THE RECORD REPORTS

## TWO-YEAR JUNIOR HIGHS: REPORT ON A NEW SURVEY

Amidst considerable current argument over the validity of the junior high school concept itself, the National Association of Secondary School Principals of the National Education Association has published a 20-page report based on a survey by N.A.S.S.P.'s Committee on Junior High School Education of "The Two-Year Junior High School." The report is available for 20 cents from N.A.S.S.P., 1201 Sixteenth Street N.W., Washington 6, D. C.

More than 21 per cent of the nation's 3500 junior high school systems are two-year schools; they enroll more than 350,000 of the estimated 1.6 million youth attending junior high schools. The new report, which will be published this fall in *The Bulletin* of N.A.S.S.P., is an attempt to fill a void in existing literature on the subject.

Among the findings of the survey on which the report was based were these specifics on the status of building facilities; only one of every four schools responding was built specifically as a two-year school; three of every four schools occupy buildings constructed for some other type of school — 28 per cent, for example, are housed in old senior high school buildings.

Other characteristics of two-year junior highs revealed by the survey:

 Two year junior high schools are not small schools; average enrollment is about 460; 18 schools enroll over 1000 pupils.

2. They are not a new development in junior high organization — median years of existence, about seven and a half; 61 two-year junior high schools were established more than 25 years ago.

 Principals report that 33 per cent were purposely planned as two-year systems; the others were dictated by building needs, overcrowding or school redistricting.

4. Forty per cent of the two-year schools are now contemplating a change in organization; almost all of these will change to a three-year junior high school. The other sixty per cent plan to continue the two-year organization.

5. Criticism of the two-year school centered mainly on (a) loss of half the student body each year and (b) the difficulty in achieving continuity in guidance and feeling of security of pupils within a two-year span.

(More news on page 346)



ARCHITECT: "For an industrial building that's low in cost and yet a credit to my client—this is the material!"



**BUILDER:** "K&M Corrugated Asbestos can be put up fast, and with regular carpenter's tools."



FIRE UNDERWRITER: "Easy to approve, and often for minimum rates, since it won't burn."



MAINTENANCE ENGINEER: "Practically no upkeep—it won't rust or rot, and needs no protective paint."

## "THEY ALL SAID K&M CORRUGATED ASBESTOS!"



"To save future costs for my client, I specified K&M Corrugated Asbestos in my new plant design. It's long-lasting, sturdy. It stands up under all sorts of

weather and conditions where other building materials fail."

Practically indestructible K&M Corrugated Asbestos makes strong, durable roof and curtain walls. It's made of asbestos fibers and portland cement, compressed with tremendous pressure. It fits 101 industrial applications attractively, without the cost of protective paint.

Low first cost, inexpensive construction, long life, and little maintenance make K&M Corrugated Asbestos popular with clients. For more information, write to us.



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Company • Ambler • Pennsylvania



A better roof or floor slab results at lower cost when architects and contractors agree on Steeltex Floor Lath, the wire mesh reinforcing that carries its own water-proofed form right on its back. Steeltex can be unrolled, stretched as in the photo above, and clipped with simple tools by workmen without previous training.

# Steeltex saved 6½ days on 14,000 sq. ft. roof deck

Pressure on school boards, architects and contractors to finance, design and build new schools is greater than ever.

Although a record 62,000 new classrooms were built in 1956, educators say the nation needs at least 93,000 more each year for the next 10 years.

School boards demand the best value for each construction dollar. They also want their new schools placed in service as fast as possible. A Michigan contractor, to cite a case in point, responded to this need by saving 6½ days on a school job by

his wise choice of materials.

The contractor is The Charlson Company of Wyandotte, Mich., who saved a week's working time on the Ecorse Elementary School in Michigan by using Pittsburgh Steel Products' Steeltex Floor Lath. With Steeltex the roof was prepared for concrete pouring in 28 working hours, compared to an estimated two weeks if other forms had been used.

The job called for laying about

14,000 square feet of Steeltex over joists in preparation for pouring a 2½-inch concrete slab. Steeltex' time savings were made more impressive by the fact that the Charlson crew had never before worked with Steeltex. Also, the job was complicated by numerous columns and other irregular shaped objects on the roof deck.

William Johnson, construction superintendent on the job, said use of Pittsburgh Steeltex—the wire mesh reinforcing that carries its waterproofed form right on its back—perSteeltex is economical . . . . . . . easy to form . . . . . . . fits irregular shapes.



These photographs show some of Steeltex' money-saving advantages. Above, rods welded to joists eliminate diagonal bridging. Steeltex and concrete give joists lateral stability.



Since Steeltex Floor Lath is easy to bend and cut, one man covered this depressed area in a few minutes. John Casey, architectural superintendent, points to the neat finished job.



Steeltex requires no engineering to make it fit snugly around irregular shapes. On this job, columns were left protruding through the roof to support a future second story.

mitted his men to start laying Steeltex on a Wednesday morning and complete the job Monday noon, just  $3\frac{1}{2}$  days later.

Steeltex, sold by the Pittsburgh Steel Products Division of Pittsburgh Steel Company, was specified by the Detroit architectural firm of Giffels & Vallet, Inc., L. Rosetti, Associated Engineers and Architects.

The specification pleased President K. H. Charlson of The Charlson Company who said:

"Steeltex definitely was the best choice. It is a good product that is easier to cut and shape than other material. The paper backing reduces dripping and eliminates clean-up problems on the floor below.

"Steeltex is economical to buy, saves a lot of costly, time-consuming work and produces a high quality concrete slab with good reinforcing."

You, too, can reduce costs and pour concrete decks quicker while improving the quality of floors and roofs—when you use Steeltex.

The special advantages of Steeltex will work as well for you as for this Michigan architect and the contractor.

A trained Pittsburgh Steel Products engineer, with lots of construction know-how, is available close at hand. Call him at any of the district offices listed here. Do it today.



You eliminate messy drip-through on the floor below when you use Steeltex. Mesh and water-proofed paper backing can be fitted right to the edges of objects like this sump on the roof deck.

▶ See Sweets Catalog Section 2-B

# Steeltex®

## **Pittsburgh Steel Products**

a division of Pittsburgh Steel Company

Grant Building •

Pittsburgh 30, Pa.



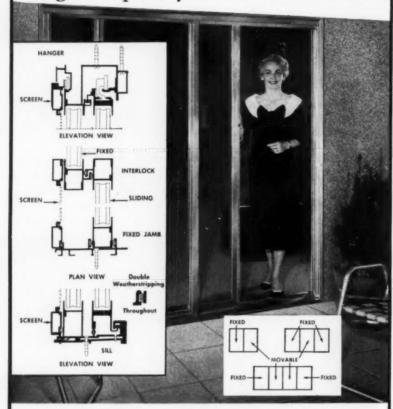
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Now you can specify Fleetlite Sliding Glass Doors or attractive Picture Walls that block winter winds and western dust storms yet bring outdoor beauty into any room. Your clients will appreciate the extra benefits of this quality engineered trouble-free construction.

Doors slide silently and easily on overhead ball bearings. Screens glide on nylon rollers. Doors interlock with double mohair weather stripping on all four sides. Specially designed aluminum extrusions provide rigidity and maintain alignment. You can specify plate glass or insulating glass up to one inch thick.

	Windows lift out for easy cleaning. Mohair weather- stripped.	Achieve design harmony with matching Fleetlite double hung and sliding windows.
	Picture window combination with double, double - hung flanking windows.	Please send literature on:
	Jalousie Windows and Doors protect in any climate. Inside screens replaceable with storm sash.	☐ Sliding Glass Doors ☐ Horizontal Sliding Windows ☐ Double - Hung Windows ☐ Jalousie Windows and Doors
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	TIMES WINDOW (D)	CityState

FLEET! OF AMERICA, INC.; 2029 Walden Avenue, Buffalo 25, N. Y

#### THE RECORD REPORTS

(Continued from page 342)

#### ON THE CALENDAR

#### October\_

- 2-6 The 12th annual convention, California Council of Architects, and California-Nevada-Hawaii Regional Conference, American Institute of Architects — Hotel del Coronado, San Diego
- 3-5 The 26th annual meeting, Porcelain Enamel Institute — Greenbrier Hotel, White Sulphur Springs, W. Va.
- 6-9 Gulf States Regional Conference, American Institute of Architects; theme, "The Architect and the Industrial South" — Dinkler-Tutwiler Hotel, Birmingham,
- 7-9 National Electronics Conference, co-sponsored by Illinois Institute of Technology and two other universities and two other technical societies — Hotel Sherman, Chicago
- 7-10 The 35th annual meeting, American Institute of Steel Construction Hotel Coronado, Coronado, Cal.
- 7-11 Fall General Meeting, American Institute of Electrical Engineers
   — Chicago
- 9-11 Annual meeting, Society of Experimental Stress Analysis—Hotel El Cortez, San Diego
- 9-11 First annual Congress on Better Living, sponsored by McCall's — Shoreham Hotel, Washington, D. C.
- 10-11 Eighth annual Noise Abatement Symposium, jointly sponsored by Armour Research Foundation of Illinois Institute of Technology, Acoustical Society of America, American Society of Safety Engineers, National Noise Abatement Council, American Society of Planning Officials, American Industrial Hygiene Association, Acoustical Materials Association and Noise Control Magazine—Sherman Hotel, Chicago
- 11-12 Fall meeting, Virginia Chapter, American Institute of Architects, and annual meeting, Virginia Society of Professional Engineers — Hotel Roanoke, Va.
- 11-13 Annual meeting, National Trust for Historic Preservation — New Ocean House, Swampscott, Mass.
- 13-15 Annual meeting, American Institute of Planners — Chicago

(Continued on page 350)

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a new standard of

TILE QUALITY

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## HAKO

measurably better

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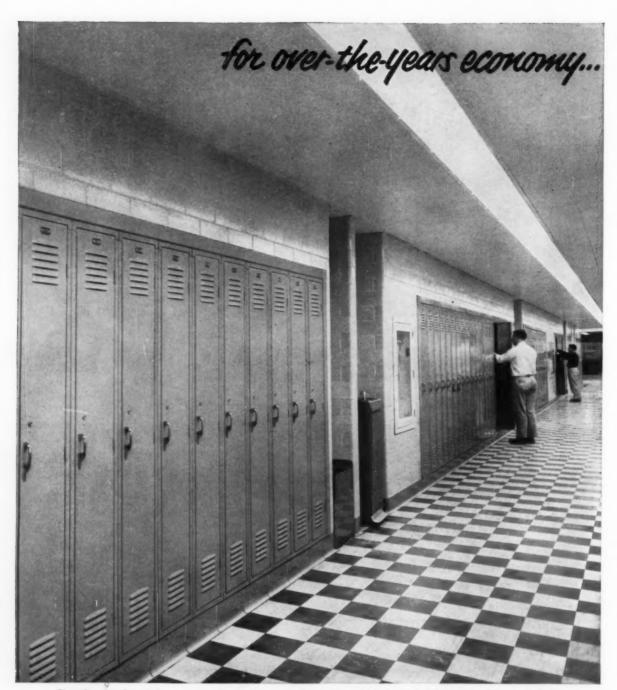
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These Republic Steel Lockers were installed in the new student building, Case Institute of Technology, Cleveland, Ohio.

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In schools, colleges, institutions everywhere, Republic Steel Lockers are on guard protecting the valuables and personal belongings of students and faculty at study, work, and play.

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And Republic Steel Lockers can take it! The handsome finish will not peel, chip or flake.

Republic Standard Steel Lockers offer three locking systems-are available in many types and sizes for every conceivable storage requirement.

Republic's Berger Division, locker manufacturers for more than 65 years, offers school administrators and architects a complete planning and installation service. This service supplies technical planning and engineering service, then assumes full responsibility for complete installation. Get all the facts from your Berger representative, or send for detailed booklet today.



TRUSCON "O-T"® STEEL JOISTS were used throughout the two-story addition to Brush High School, Lyndhurst, Ohio. Every Truscon "O-T" Joist—Short-Span Series—is quality protected and backed by the Steel Joist Institute Seal of Approval. Send for design data today.



REPUBLIC LIBRARY STEEL SHELVING, manufactured by Republic's Berger Division, is dependable, sturdy. It offers convertible convenience...shelves can be adjusted, rearranged with sections and dividers to any book height. Use other Republic Steel Shelving in laboratories and workshops.



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- ☐ Truscon "O-T" Joists
- ☐ Truscon Vision-Vent Window Walls

Company\_

Zone\_\_\_State\_



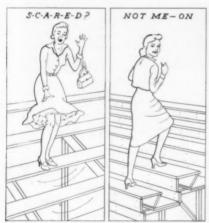
# "Closed Deck"ROLL-OUTS

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The penalty contract label 635 illustrated above is your guarantee of Genuine Solid African Mahogany.

#### HUSSEY EXCLUSIVE "Closed-Deck" DESIGN MEANS MORE SAFETY AND COMFORT FOR SPECTATORS

"Closed Decks" are but one of the many reasons why so many architects and school planners are specifying Hussey Roll-Out gym seats.



#### HUSSEY "Closed-Deck" ROLL-OUTS

Scientifically engineered to prevent side sway . Easy to open and close . Save construction expense • Eliminate Fire Hazard . Lower Insurance costs • No refuse under the stand . Save cleaning time . Will not mar the floor . Save space.

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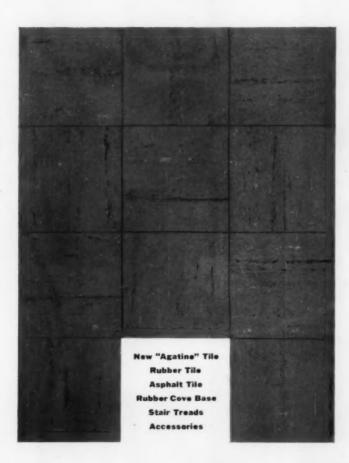
#### THE RECORD REPORTS

(Continued from page 346)

- 14-18 Annual meeting, American Society of Civil Engineers -Hotel Statler, New York City
- 15-18 Annual convention, National Council on Schoolhouse Construction - Milwaukee
- 17-19 Annual meeting and forum, Pennsylvania Society of Architects -Galen Hall, Wernersville, Pa.
- 17-19 Fall meeting, National Society of Professional Engineers Grand Pacific Hotel, Bismarck, N. D.
- 17-20 Northwest Regional Conference, American Institute of Architects - Gearhart Hotel, Gearhart, Ore
- 21-23 Annual conference. National Association of Housing and Redevelopment Officials - Sheraton Jefferson Hotel, St. Louis
- 21-25 The 45th National Safety Congress and Exposition, sponsored by the National Safety Council Chicago
- 23-26 Architects Society of Ohio Annual Convention - Neil House, Columbus. Ohio
- 24-25 General Assembly, including the 25th annual meeting, Engineers' Council for Professional Development and fourth annual general assembly, Engineers Joint Council - Hotel Statler, New York City
- 27ff Fourth annual meeting, Atomic Industrial Forum, and third annual Trade Fair of Atomic Industry, concurrently with fall meeting of American Nuclear Society; until November 1-The Coliseum, New York City
- 28-30 Fourth annual atomic industry conference, sponsored by Atomic Industrial Forum - Plaza and Waldorf-Astoria Hotels and Coliseum, New York City
- 28-31 The 1957 Trade Fair of the Atomic Industry ("Atom Fair '57"), sponsored by Atomic Industrial Forum - Coliseum, New York City
- Texas Regional Conference. American Institute of Architects: through November 1 - Dallas
- 31 Conference on Reactor Safety, sponsored by American Nuclear Society, Atomic Industrial Forum and U. S. Atomic Energy Commission - New York City
- 31ff Central States Regional Con-(Continued on page 354)



## Webb & Knapp chooses B.F.Goodrich



# Goodrich Croseo®

## for New York's Graybar Building

Keeping floor maintenance costs down is a primary concern of anyone running a skyscraper. That's why Webb & Knapp, who own and operate some of New York's biggest buildings, chose B. F. Goodrich Koroseal floor tile for busy corridors in the mammoth Graybar Building. Koroseal actually cleans in half the time, needs less people to take care of it. Koroseal needs no extra surface finishes (it has "built-in lustre"). A simple washing or buffing keeps it looking good as new. In fact, the more it's walked on, the better it looks! For any building, large or small, specify B. F. Goodrich Koroseal floor tile . . . and save your client a lot of money.

SPECIFICATIONS: 31 new, distinctive colors (1/16", .080 gage and 1/8" thicknesses), can be used on, above or below grade.

FOR FURTHER INFORMATION: See Sweet's or write B. F. Goodrich Flooring Co., a Division of The B. F. Goodrich Company, Dept. AR-10, Watertown 72, Mass.



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you can specify equipment that is just right for the job—whether it's spot heating, space heating or a complete central system. Trane brings you matched equipment—designed, engineered and built together, to work together.

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PROJECTION HEATERS are vertical discharge units that project heat from ceiling to the floor line. 18 standard and high cfm models for steam or hot water. Exclusive TRANE Louver Cone Diffuser directs air stream in any desired pattern—gives one unit the versatility of many.



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SAVE FUEL with the new, redesigned line of TRANE Steam Specialties. Traps, strainers, valves, vents for any type of system.

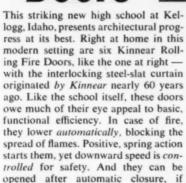
### For a modern school...



modern FIRE doors...

Top Photo: Suter, Hedrich-Blessing, Lower Photo: Billy Hope. Courtery of Howard Andrews, Supt. of Schools, Kellogg, Idaho. Architects & Engineers: Culler, Gale, Marrell & Norrie, Spokane, Wash.; Perkins & Will, Chicago, Ill., White Plains, N. Y.

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oratories, Inc.)

For all regular (non-fire) needs, standard Kinnear Rolling Doors save space, time, and cut costs. They give added protection against fire, wind, weather, trespass, and vandalism. Built

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Wherever you need doors — for fire protection, for opening and closing efficiency, or for both, there's a Kinnear Rolling Door for best results.

KINNEAR
ROLLING DOORS
Saving Ways in Doorways

#### THE RECORD REPORTS

(Continued from page 350)

ference, American Institute of Architects; through November 2 — Skirvin Hotel, Oklahoma City

#### November.

- 2-7 The 50th annual convention, National Association of Real Estate Boards — Chicago
- 4-7 The 1957 Building Products Exposition of the National Retail Lumber Dealers Association — Trade and Convention Center, Philadelphia
- 7-9 (Tentative) The 43rd annual convention, Florida Association of Architects — Fort Harrison Hotel, Clearwater, Fla.
- 10-16 Annual meeting, American Society of Sanitary Engineers — Fort Lauderdale, Fla.
- 11-13 Annual convention, Structural Clay Products Institute — Greenbrier Hotel, White Sulphur Springs, W. Va.
- 11-15 National Hotel Exposition Coliseum, New York City
- 11-16 Meeting of Board of Directors, American Institute of Architects — Phoenix, Ariz.
- 13-14 Air Pollution Conference, cosponsored by Armour Research Foundation and Midwestern Air Pollution Prevention Association — Chicago
- 13-15 Eighth National Conference on Standards, in conjunction with the 39th annual meeting of the American Standards Association, sponsor of the conference — St. Francis Hotel, San Francisco
- 13-27 Biennial Building Exhibition London
- 18-21 Tenth Exposition of the Air-Conditioning and Refrigeration Industry — International Amphitheater, Chicago

#### December.

- 1-4 Annual convention, National Swimming Pool Institute — Shamrock-Hilton Hotel, Houston
- 1-4 American Municipal Congress, annual conference of American Municipal Association — Sheraton-Palace and St. Francis Hotels, San Francisco
- 1-6 Annual meeting, American Society of Mechanical Engineers — Hotel Statler, New York City
- 4-5 Building Research Institute Correlation Conference, "Adhesives and Sealants in Buildings" —

(Continued on page 358)

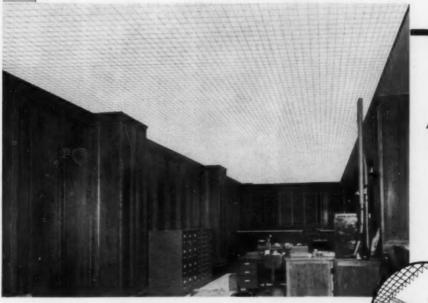
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We selected the Neo-Ray ceiling for its simplicity in design and maintenance.

It answered our problem in coordinating the traditional design of the panelled walls with need for good modern lighting at the ceiling.

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Neo-Ray is recognized as the pioneer in the development and manufacture of louvred ceilings ... with years of louvred ceiling experience. Let the "know-how" of our engineering department assist you. No obligation, of course.

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THE NEW ADMINISTRATIVE OFFICES of Ford Motor Company are housed in this 12-story glass and steel building in Dearborn, Michigan. The creation of Skidmore, Owings & Merrill, Architects & Engineers of New York City, this structure utilizes *Pittsburgh's* Solex® Green-Tint, Heat-Absorbing, Glare-Reducing

Glass in the large glass areas which form a prominent part of the curtain wall exterior. In addition, this modern eye-catching building includes such Pittsburgh Glass products as Twindow<sup>®</sup> . . . the twin-glass insulating windowpane . . . Polished Plate Glass, Rough Plate Glass, and Pittsburgh Copper-Backed Mirrors.

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PITTSBURGH GLASS

# distinctive architecture of the new in Dearborn, Michigan





**THE EXCEPTIONAL** insulating properties of *Pittsburgh's* Twindow provide a clear view of this court off the main concourse of Ford's new Central Office Building, both winter and summer.



**A FEATURE** of this new Ford building is the use of Pittsburgh Polished Plate Glass to separate the secretarial areas from the hallway, with Pittsburgh Rough Plate Glass dividing private offices.

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#### THE RECORD REPORTS

(Continued from page 354)

Shoreham Hotel, Washington, D.C.

- 11-12 National Construction Industries Conference, sponsored by Armour Research Foundation; theme. "Creative Trends in Structural Design" - Hotel Sherman, Chicago
- The Architecture of Antonio Gaudi, an exhibition prepared

under the direction of Henry-Russell Hitchcock: through February 23 - Museum of Modern Art, 11 W. 53rd St., New York City

#### OFFICE NOTES

#### Offices Opened\_

· John Alexanders announces the establishment of his practice as consulting engineer at 122 Phelps Ave., Cresskill. N. J. He was formerly chief engineer of the Bergen Iron & Engineering Company of Carlstadt, N. J.

- · R. C. M. Calvert Jr. & Associates, Consulting Engineers, have opened offices at 1048-B Warwick Rd., Warwick, Va. (P. O. Box 442).
- · John R. Diehl, James C. Ritchie and Francis R. Stein, architects, have announced the formation of a new firm, John Diehl Associates, Architects. Offices are at 40 Witherspoon St., Princeton, N. J.
- · Leo L. Fischer, A.I.A., has opened offices at 341 Nassau St., Princeton N. J. He was a partner in the firm "The Architectural Group," now dissolved.
- · Haarstick Lundgren and Associates, Inc., architects and engineers of St. Paul, Minn., have opened an office in the Pacific National Bank Building, 333 Montgomery St., San Francisco. Robert A. Bennighof, an associate of the firm, will be head of the new office.
- · George Foster Harrell and E. G. Hamilton have announced their association in the partnership Harrell & Hamilton, Architects, with offices in the Republic Bank Building, Dallas, Tex.
- · Wilbur F. Kruse, Architect, Don Roberts, Associated Architect, is a new firm with offices at 1401 Perry, Wichita 3, Kan.
- · Morgan & Sandifer, Architects, a new firm composed of Jesse O. Morgan Jr., A.I.A., and Dan P. Sandifer, have opened offices in the Beck Building, Shreveport, La.

#### Firm Changes\_

- · Hellmuth, Obata & Kassabaum, Inc., Architects, have named as associates in the firm: J. Tom Bear, Rolf E. Muenter. Chester E. Roemer and William W. Rupe, Offices are at 315 N. 10th St., St. Louis 1, Mo.
- · Olsen Urbain & Sandstrom, Architects-Engineers, of 5 S. Wabash, Chicago, announce that Leif E. Olsen Jr. and Donal A. Olsen have been made partners in the firm.
- Jas. Gamble Rogers II, A.I.A., has announced that Laurance W. Hitt, A.I.A., Ralph P. Lovelock, A.I.A., Irwin W. Fritz, engineer, James A. Grinnan, engineer, and Herbert L. Clark, specification writer, have been made asso-(Continued on page 362)



#### stain, wax, and seal in one operation



paneling in this house. Designer: Russell Forester, La Jolla, Calif.

# **Cabot's** STAIN WAX

#### for blond and pickled effects . . . for antiquing

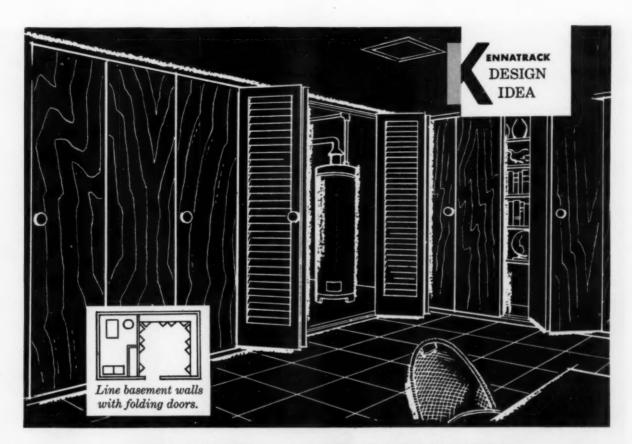
Leading architects and designers specify this unique "three in one" finish because it

- gives the rich color of a penetrating stain
- gives a soft lustrous wax finish
- seals and protects the wood
- · brings out the natural beauty of all types of wood
- gives a custom-made, professional finish

Your clients can choose from 9 appealing colors plus White and Natural.



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Please	send	me	color	card	on	Cabot's	Stain	Wa
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with folding door hardware by Kennatrack

Folding doors do triple duty: provide smart new look, storage area, finish at cost of paneling

Sound-conditioned Kennatrack hardware for folding doors provides an economical way to divide a room with a smart new look and add extra storage space.

Look how effectively folding doors may be used to bring a new look to a basement. In fact, any room—bedroom, porch, family room—gains

beauty and utility through low-cost folding doors with hardware by Kennatrack.

This is only one of the many new ideas being developed by a full-time staff of designers and engineers at Kennatrack, world's largest exclusive manufacturer of hardware for gliding and folding doors. Write us today for full information about this idea. We'll be pleased to help you; we'll also be glad to send you our free catalog so you can see for yourself why more architects specify Kennatrack Gliding Door Hardware than any other line.



KENNA-PAK. One-piece header assembly (with track installed) for quick and easy installations of by-passing doors.



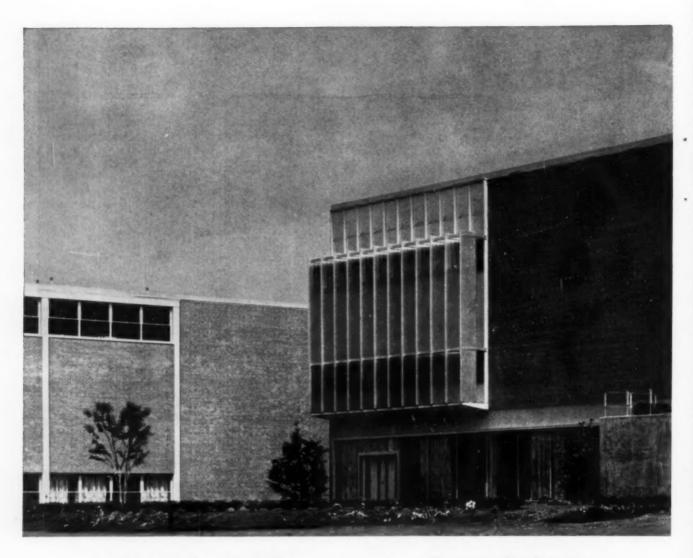
KENNAFRAME. Original, patented all-steel frame (with aluminum track) for pocket doors. Goes up in minutes. For quiet and for quality

## KENNATRACK

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# America's foremost plants\* feature

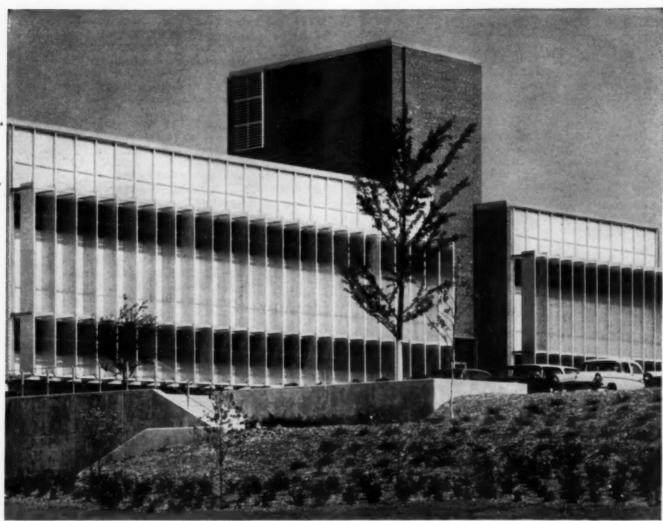


New Lambert-Hudnut plant, one of the nation's "top ten", brightens the landscape with a LUPTON Curtain-Wall System

Voted one of this country's most efficient and beautiful new industrial installations, the Lambert-Hudnut building at Lititz, Pa., makes interesting and practical use of LUPTON Aluminum Curtain Walls and Windows.

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In combination with the wide curtain-wall areas and the masonry construction, the use of LUPTON Aluminum Projected Windows gives the final touch of modern functional beauty to this outstanding new building. On approaching



New Lambert-Hudnut building, Lititz, Pa. Architects and Engineers: A. M. Kinney, Inc., Cincinnati, O. Contractors: Robert E. Lamb, Inc., Philadelphia, Pa. Photographs by Courtlandt V. D. Hubbard.

# **LUPTON** metal windows and curtain walls

the Lambert-Hudnut plant, one feels that an exterior of such striking design must shelter an efficient, well-run office and production operation.

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#### THE RECORD REPORTS

(Continued from page 358)

ciates. The firm becomes Jas. Gamble Rogers, Lovelock and Fritz, Architects and Engineers; offices are at 145 Lincoln Ave., Winter Park, Fla.

 Tippetts-Abbett-McCarthy-Stratton, Consulting Engineers, have named Walther Prokosch and Barnett Silveston as general partners, Eugene E. Halmos and Wilson V. Binger as associate partners in the firm, which is located at 62 W. 47th St., New York 36, N. Y.

- Tuttle-Kellogg Architectural & Engineering Co., Inc., of Arcadia, Cal., have appointed Jack Lester, architect, to head their new branch office in Phoenix, Ariz.
- Weed-Johnson Associates, architects of Miami, Fla., have admitted architects Arnold W. Eckhoff, John O. Grimshaw, C. Robert Abele and James W. Junkin Jr. as associate members of the firm.

New Adresses.

Adache Associates, Inc., Engineers and Associated Architects, Penthouse, Hotel Hollendew, Cleveland, Ohio

Gordon W. Bradley, A.I.A., and Stanley F. S. Wong, Design Associate, 1220 Waimanu St., Honolulu 14, Hawaii

Alton L. Craft, Architect, 7 E. 47th St., New York 17, N. Y.

Emery Roth & Sons, Architects, 400 Park Ave., New York 22, N. Y.

Edward D. Stone, Architect, 38 E. 65th St., New York 21, N. Y.

P. H. Ziel-J. S. Blossom & Associates, Consulting Engineers, 206 E. Sixth St., Cincinnati 2. Ohio

#### MORE STUDY ENGINEERING FEDERAL OFFICIAL REPORTS

Henry H. Armsby, chief for engineering education in the Office of Education, Department of Health, Education and Welfare, had some encouraging words on the prospective supply of engineer graduates. The output of engineering colleges is on the increase.

The postwar low in numbers of engineer graduates occurred, in June 1954, when 22,000 degrees went to "the survivors" of the smallest postwar freshman class of 34,000 which had entered in the fall of 1950.

But since that time, Mr. Armsby reported recently, the number of freshmen has increased each year until, in 1956, it reached 78,0000, 10.7 per cent of all college freshmen. This contrasts with 6.6 per cent in 1954. He added that the 1956 freshman class should, according to past trends, produce around 43,000 engineering graduates in 1960, nearly double the 22,000 in 1954.



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#### CORRECTIONS

Architectural credit for the Honolulu Junior Chamber of Commerce Building (AR, July 1957, p. 12) should have read: Lemmon, Freeth, Haines and Jones, Architects, and Gordon W. Bradley, A.I.A., Associated Architects, with Stanley F. W. Wong, Design Associate.

Architect Richard Neutra has requested that the Record publish this addendum to its August 1957 report on the St. John's College project (pp. 167–169): "Neutra and Alexander wish to credit Cochran, Stephenson & Wing, Baltimore, as their associated resident architects. President Richard Weigle, Dean Jasha Klein and the faculty were active collaborators."

(More news on page 370)



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## THE RECORD REPORTS

REVIEWING THE RECORD
(Continued from page 16B)

quently found in the façade than in the plan. That there is a most distinct tendency to restrict the development of architecture to certain lines and traditions, which, having filled their places in
the history of architecture, are no longer
of any value to us except as history.
That the Renaissance of Italy and
France is the foundation of their theories

in composition, and their inspiration in design. That the most successful, from their standpoint, are those who have treated with most respect the teachings of the founders of the Renaissance."

If Barney sounded like a man trying desperately to convince an audience he knew all along had no desire to be convinced, he was probably right. The last article in this series was titled by its author, Theodore Wells Pietsch, "The Superiority of the French-Trained Architect" (a title which the magazine, which had remained strictly neutral

through the entire argument, felt constrained to footnote, "all other things being equal"). Pietsch dismissed Barney with the statement that he [Barney] was "voicing the sentiments of a small clique of malcontents of some 50 years ago"; then, feeling, apparently, that Barney might be getting off too lightly, added, "there seems to be such a want of sincerity and good faith on the part of the author of this article [Barney's December piece], that it hardly deserves comment."

Personalities aside, Pietsch defined what was to him the essence of the Ecole training: "Young men will continue to pursue their studies in our many splendid schools, which have found pattern in the Ecole des Beaux Arts and are its proselytes. Tradition has, does and always will form the essential part of that training, and the architecture of the future will continue always as that of today and of the past the missing link between the old and the new, as the greatest précurseurs of any time stand with their feet on the rocks of tradition while seeking the ineffable ideal perhaps within the clouds. Tradition is only a crystallization of the habits, manner of thought and experience of a nation. Everything is subject to the laws of evolution, even tradition. But tradition is not incompatible with truth. It is a truth voiced by a great agglomeration. The laments and accriminations of individuals against following its lessons are hopeless.

The subject of education was dropped from the Record then until 1928, when John V. Van Pelt took it up again, and unconsciously vindicated Barney and showed Pietsch the error of his judgment: "In spite of the influence of the Beaux Arts," he wrote, "architectural training in America remained distinctively a product of the American college."

In May 1931, Ralph G. Gulley said of the state of education: "Many of us cannot give attention to the crying needs of the present because of being still too much engrossed with the pretty-picture antics of the Ecole poché teams of the inglorious Nineties when architectes so loved their work that they could find no time to accept commissions. We must once and for all rid ourselves of such nonsense. We have had enough of paper architecture which results from the selfish motive of deriving our personal pleasure at the expense of others in trying to express our individual selves. We have been steeped in 'styles' for so long that there is no visualization of architecture

(Continued on page 366)

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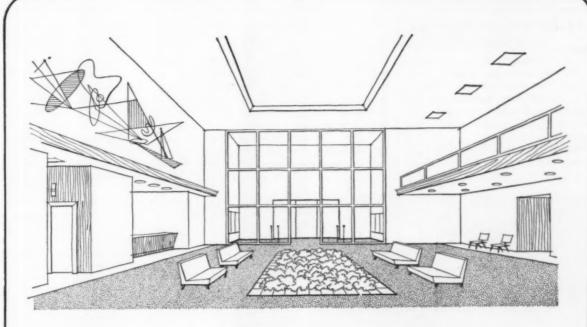
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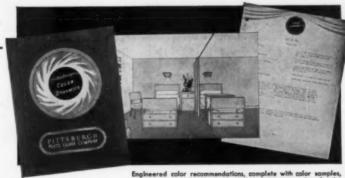
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## THE RECORD REPORTS

### REVIEWING THE RECORD

(Continued from page 364)

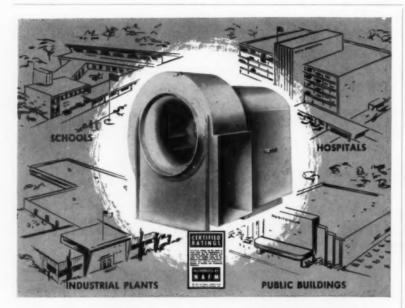
less it be accompanied by some parasitical label of recognition known as a 'style'." Mr. Gulley's invective was no less heartfelt than Barney's, but he talked like a man who knew he was on the winning side — and he spoke in the past tense.

In the same issue, Joseph Hudnut seemed to feel that Beaux Arts had been so far eliminated that one could afford some regrets. As an instance: "No able bodied 100 per cent American hesitates for a moment to form esthetic judgments concerning architecture, and the notion that architecture is created in a sudden frenzy of untaught genius satisfactorily explains his own inability to create beauty. Until recently this somewhat juvenile concept has been held in check by the awe inspired by the hocus-pocus of Vignola. The Five Orders were invaluable for that conspiracy of bewilderment that is essential to every profession

especially to the profession of teaching - and even big business men were willing to abdicate their right to pass judgment in the presence of a professor who could clearly distinguish a Corinthian column from a cauliflower. . . . But today, with Vignola driven from his throne, and Eclecticism quite discredited by its own excesses, we have once more to deal directly with the romantic idea of untaught genius." Mr. Hudnut spoke seriously; he was worried that students, concentrating exclusively on the function of architecture, would not find the discipline to concentrate on the elements of visual satisfaction. Writing in October 1942, though, he seemed satisfied with the new training as it had worked out, and cited the case of a student designing "A Cooperative Farm": "This farmer is a better client than those ambassadors, archbishops and captains of industry who were my clients in my student days at Columbia: a truer friend to architecture even than that eccentric, affectionately remembered old gentleman who, 'finding himself in possession of four antique columns,' wished to build a museum.'

Of three surveys made of American architectural education by the RECORD, results of the one published in September 1936 showed most of the schools either adjusting to or contemplating changes in their curricula. In Cincinnati, the school reported on the working of their cooperative program, in effect since 1922, which put students in architectural offices for half of their five-year training period. The changes reported in the curruculum of the school at the University of Minnesota were fairly typical: "(1) Starting students off immediately by practice in designing the whole of a building, however small, instead of in so-called 'elements'; (2) inclusion under design of all phases of architecture, especially both composition and construction, in one unified effort under collaborative criticism; (3) opportunity for the student to develop his own power of independent achievement by occasional 'Solo Problems,' done entirely without criticism; (4) use of a somewhat different type of program, leaving the major part of investigation and formulation to the student himself."

John Knox Shear, then head of the Department of Architecture at Carnegie Institute of Technology, compiled the results of another Record survey of the architectural schools, in 1954; some striking differences in attitude were exhibited vis-à-vis earlier methods as revealed in the 1907 survey of American (Continued on page 368)



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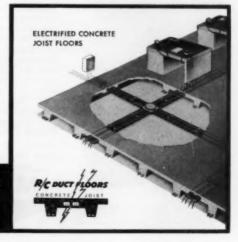


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## THE RECORD REPORTS

## REVIEWING THE RECORD

(Continued from page 366)

schools. Of the seven questions asked in the 1954 survey, the first, concerning the selection and evaluation of students, was not even a point of discussion in the early part of the century. Of the three questions about the curriculum — concerning architectural history, "Basic Design," and the "integrated curricu-

lum"—outlooks had so changed to suggest that mid-century educators were talking about different subjects altogether. Despite many viewpoints on the teaching of architectural history, it was certainly not suggested by any of these educators that this was a subject providing elements to be cribbed. The all-embracing nature of the Basic Design course is a far cry from the simple elements which turn-of-the-century students cut their teeth on. And of the remaining questions, "ideological confusion" to earlier educators would have

meant questions of the relative validity of Gothic and Classic design.

Teachers of the early period would have felt right at home, though, with the question on "easing the transition from education to practice and strengthening the relationship between student and profession."

A partial list of Record pieces on architectural education includes:

"The Ecole des Beaux Arts," by Ernest Flagg; April-June 1894, pp. 419–428, and July-Sept. 1894, pp. 38–43.

"Education of an Architect," by Henry R. Marshall
—July-Sept. 1895, pp. 82–92

"Architectural Schools in the U. S.," by Percy C. Stuart—Columbia University, July 1900, pp. 1–21; University of Pennsylvania, Jan. 1901, pp. 314–336

Over the Drafting Board: "The Work of Professor Ware"—Jan. 1903, pp. 91–94

American Schools of Architecture—I. Columbia University, by A. D. F. Hamlin, May 1907, pp. 321–336; II. Massachusetts Institute of Technology, by Prof. F. W. Chandler, June 1907, pp. 443–458; III. Cornell University, by Gertrude S. Martin, July 1907, pp. 39–55; IV. Harvard University, by H. Langford Warren, August 1907, pp. 135–150; V. Washington University, by Louis C. Spiering, Nov. 1907, pp. 385–396

"The Ecole des Beaux Arts: Its Influence on Our Architecture," by J. Stewart Barney—Nov. 1907, pp. 333-342

"The Ecole Des Beaux Arts and Its Influence on Our Architectural Education," by A. D. F. Hamlin— April 1908, pp. 241–248

"The Ecole des Beaux Arts: What Its Teaching Means," by Paul Cret—May 1908, pp. 367–371

"Our National Style Will Be Established on Truth, Not Tradition," by J. Stewart Barney—Dec. 1908, pp 381–386

"The Superiority of the French-Trained Architect," by Theodore Wells Pietsch—Feb. 1909, pp. 110-114

"Paris School Days," by George S. Chapell—
"How the Student Lives and Works at the Ecole
des Beaux Arts," July 1910, pp. 37–41; "The
Atelier," Nov. 1910, pp. 350–354; "The
Charette," Feb. 1911, pp. 139–143

"Architectural Training in America," by John V. Van Pelt—May 1928, pp. 446-451

"The Education of an Architect," by Joseph Hudnut
—May 1931, pp. 412–414

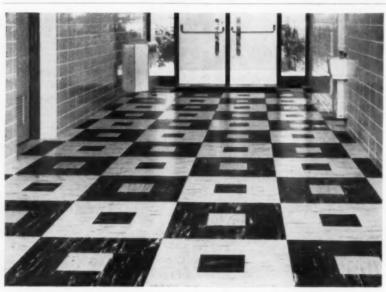
"A Job for Alma Mater," by Raiph G. Gulley— May 1931, pp. 414-416

"What Should Be Done to Improve Architectural Education," by Dr. S. Giedion—May 1934, pp 373-375

"The Education of an American Architect," a survey —Sept. 1936, pp. 201–214

"Education and Architecture," by Joseph Hudnu October 1942, pp. 36–37

Survey of U. S. Architectural Schools: a report by John Knox Shear—"Who Should Study Architecture?", Aug. 1954, pp. 194 et seq.; "How Should Architecture Be Taught?", Sept. 1954, pp. 182 et seq.; "How Do Students Become Architects?", Oct. 1954, pp. 178 et seq.



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## THE RECORD REPORTS

(Continued from page 362)

Sixth and final unit of New York University-Bellevue Medical Center - Skidmore, Owings and Merrill, architects - will be 19-story hospital combining functions of teaching, research and patient care. Top ten floors are designed for bed patients, the lower four for outpatient clinics; there will be six floors of operating rooms, laboratories and other services. Estimated cost: \$20 million. Below exterior at right are typical (1) solarium on bed floor and (2) nursing station, midway in two-corridor bed floor



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Described as "the keystone in the whole group of structures" that comprise the Center, the proposed hospital will replace University Hospital (formerly New York Postgraduate Hospital) at Second Avenue and 20th Street in Manhattan.

It is designed primarily for patients of the middle-income group and will be "typical of the kind of hospital with which most students will be associated in later professional life." All of the floors of the adjacent buildings will be directly connected to the first seven floors of the new building.

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(More news on page 372)

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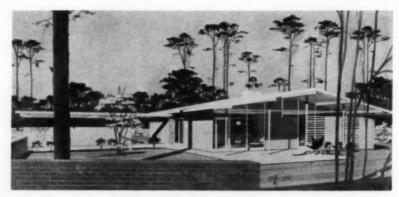
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### THE RECORD REPORTS

(Continued from page 370)

## DESIGN FOR TV AUDIENCE: "HOUSE THAT HOME BUILT"

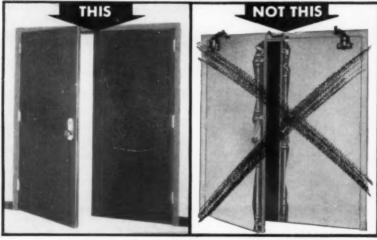
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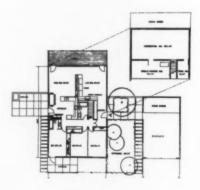
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Above: "Plan A" of the "House that Home Built" Below: "Plan B," which allows larger living room, family room and kitchen, and provides an optional recreation room and storage space below grade



the house with component parts — exterior walls are prefabricated plywood panels, roof framing glued trusses, and interior partitions hardboard panels. Mr. McCarty also used some of the suggestions which emerged from last year's Women's Congress on Housing in planning the house, including a large amount of storage space, distributed so as to aid in noise control, and a central hall to eliminate traffic through living areas. The house is being built now in Knoxville as a project of the local Home Builders Association.

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## THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 48)

ticular problems with the chapel project as influential members of the Senate, which had approved the appropriation without debate, initiated a new attack on the design the day the session closed.

Hill-Burton hospital construction got \$121.2 million, \$4.8 million below the 1957 level but outside of the military the largest sum allocated for any 1958 construction program. Mission 66, the National Park Service 10-year construction program, came out with \$17.4 million, \$2.2 million more than its 1957 total.

Such non-military programs as Federal aid to airports, water resources, highways and reclamation took a share of reduction from fiscal 1957 but these were not significant cutbacks in the entire picture.

Appropriations for the General Services Administration for Department of Interior general investigations and the latter department's Mission 66 park improvements program stood out in the new listing because of increases above the fiscal 1957 totals. This was the situation in the non-military categories, at least

In the military classification, the White House requested Congress to provide \$1.56 billion for new public works, well under the \$2.2 billion contemplated at the first of the year before the entire budget underwent a review by the Executive Branch. Congress pared the figure still further before the final vote which sent the one and one-half billion dollar amount to the White House for Presidential signature. The savings will be effected in the revision of some plans, the stretch-out of some projects. Starts were permitted on very few new projects in the civil works program.

The Housing and Home Finance Agency took its cuts along with the rest of the Federal government structure except in the research field where \$75,000 was appropriated for starting a new farm housing study.

#### BUDGET BUREAU SEEKING TO CUT BELOW APPROPRIATIONS

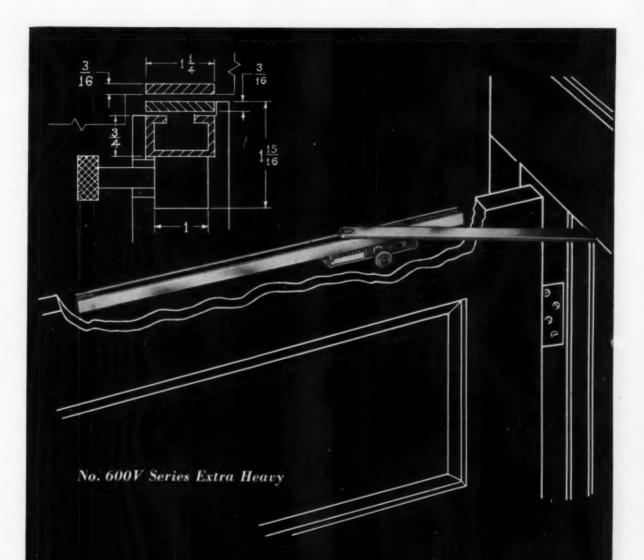
Budget Bureau attempts to hold civil works construction expenditures to totals below Congressional appropriations have irked Sen. Allen Ellender (D-Ala.), chairman of the Public Works Appropriations Subcommittee. He has termed the Budget effort "false economy" and 'an economic loss." Said he: "Financing of Federal projects in this manner will force contractors to include large contingency items in their future bids. This can only lead to rapid increases in the cost of these Federal projects."

The comment was only one in a multitude of references to the Bureau directive of August which instructed all Federal agencies to hold current year outlays to the levels of last year wherever possible. The action caused many headaches among budget officials in the various agencies. The U. S. Public Health Service was having considerable trouble with a number of its programs because of the sums held in reserve by the Budget Bureau despite Health, Education, and Welfare requests for funds already appropriated by Congress.

Senator Ellender summed up the military's predicament with this statement: "The Chief of Engineers has ordered delays in starting new contracts wherever possible, and requests for apportionment are to be held to 75 per cent of available funds or accompanied by a list of deferrable items that will

(Continued on page 376)





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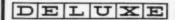
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## THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 374)

bring the request down to the 75 per cent level."

Rumblings about the Executive action amounting to a pocket veto of appropriations were heard in Congress.

#### BUILDING COST LIMITS FOR MILITARY REVISED UPWARD

Cost limitations on military types have been adjusted by Congress in keeping with rising construction costs.

The per sq ft cost ceiling on cold storage warehouses was raised from \$20 to \$28. The six-dollar top for regular warehouse construction remained unchanged. The per man top cost for permanent barracks was raised from \$1700 to \$1850 and for bachelor officer quarters from \$5000 to \$7500 per man.

Sq ft limitations on military housing were continued but a change permitted up to 15 per cent of enlisted men's quarters to have a total floor area not exceeding 1250 square feet. This would apply to four-bedroom units.

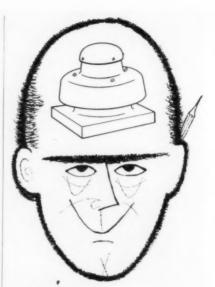
Congress has repealed a restrictive section of the 1954 law which required no more than 250 family quarter units to have a net floor area of 2100 sq ft. Other family unit construction under the section was limited to a net floor area of 1250 sq ft with the average not to exceed 1080 sq ft.

## VA EXTENSION SURPRISES, FHA CHANGES OUESTIONED

In a surprise move, Congress extended the GI home loan program another year beyond the July 25, 1958, expiration date. This gives builders who have the talent for lining up financing at the 4½ per cent figure until mid-1959 to offer homes with mortgages backed by Veterans Administration guarantees.

The action applied to both the VA-guarantee and the direct VA home loan program, with \$200 million authorized for the latter. In the case of the direct program, maximum mortgage amounts were increased from \$10,000 to \$13,500. The agency also was authorized to reserve the direct loan funds for three months under commitments to builders charging a two per cent fee. Private lenders would receive the fee if the loans were purchased within 60 days of VA disbursement. The VA can make construction advances up to an amount equal to cost

(Continued on page 380)



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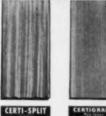
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How was the challenge met? The authors give their candid answer without hesitation. They show scores of completed projects of all types — hospitals, houses, apartments, offices, factories, gasoline stations, schools, and hotels — all of which are positive aesthetic and functional contributions to their communities.

While the great majority of these projects are superior examples of completed construction, the authors also show some design projects which were never built. They decry the opportunity lost by bomb-flattened cities to rebuild logically, instead of recreating the same narrow streets and monotonous row-houses.

All of the projects in this remarkable book were designed and constructed by Germans, and strongly indicate that German architects are entering a new era of originality. Although Germans, in their haste to rebuild, borrowed foreign ideas, a new independence has been dramatically evident since 1950. The authors believe that in some areas, particularly school construction, German architecture is reaching unsurpassed levels of creativity.





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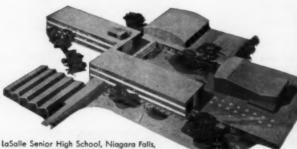
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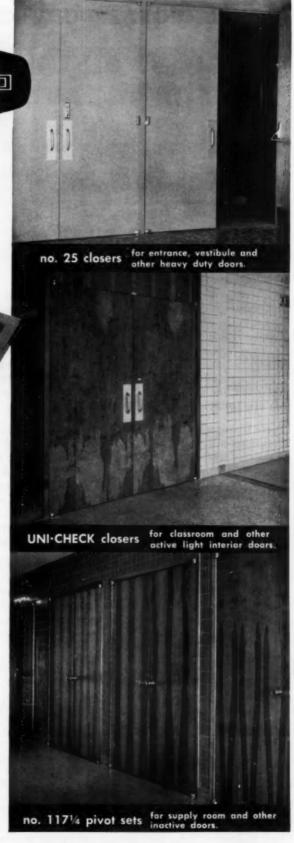
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edited by JOHN KNOX SHEAR, A. I. A. Editor-in-Chief, Architectural Record

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In addition, there are several other valuable sections in this comprehensive book. One is called "Worship and the Arts." The opening essay of this section thoughtfully and meaningfully explores the relationship between eternity and the moment—as it pertains to the design of churches. There follow six articles by leading clergymen on worship and the arts in their particular tradition—Jewish, Catholic, Orthodox, Episcopal, Reformed, and Lutheran. Each is illustrated with an outstanding new building of that faith.

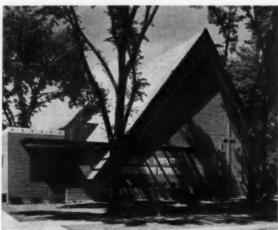
There is also a series of cogent studies by leading architects, clergymen, and secular authorities. One is by a noted economist, who predicts that 70,000 churches will be built or substantially rebuilt in the U.S.A. in the next ten years. Another, titled "A Religious Architecture for Today," attempts to define the religious architectural requirements of the atomic age, so that our churches may represent us just as the Gothic, Byzantine, and Baroque churches and cathedrals did in their time and civilization. There are four more studies of equal interest.

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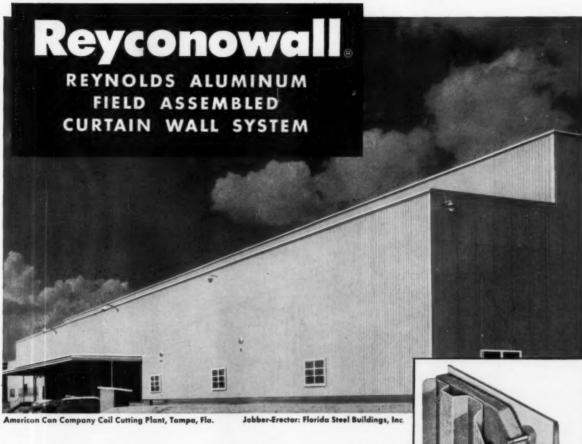
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In this Reyconowall installation the exterior is Reynoside 4" Rib .032" thick. The insulation is 1" glass fiberboard. The interior is flat sheet.





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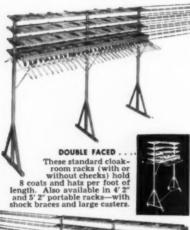
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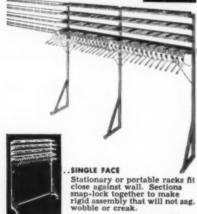
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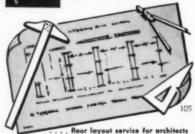




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## THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 376)

of land plus 80 per cent of value of improvements.

Another important change involved bypassing of the Voluntary Home Mortgage Credit Corporation on such loan applications. VA now is authorized to begin immediate processing of the direct loans without the delays of waiting on VHMCC decisions.

#### Will FHA Changes Help?

The reaction to major housing legislation cooled. With more than a month to consider effects of the government's recent actions in the home financing field, builders, material suppliers, and particularly lenders were showing less enthusiasm for the "aids" than they did at the time of announcement.

The moves made under the 1957 housing act entailed reduction of down payment requirements under the FHAinsured program, increased interest rates, and stipulated discounts on the government-backed mortgages. It was the last of the three that builders were beginning to say last month offset to a large extent what might have been gained by the other adjustments. No one had any hopes that the 1957 building season would be affected; the changes came about six months too late for that. All were looking ahead to 1958 and wondering just how their programs would fare then in the light of these new regulations. There appeared to be more pessimism than optimism as far as activity under the government programs is concerned.

The nation's lenders always were less jubilant than other industry segments, both at the time the announcements were issued and in more recent state-

There was little doubt that the Federal government's moves could not boost the 1957 home production pace. Said the National Savings and Loan League: "Home builders joined Mr. Cole [administrator of the Housing and Home Finance Agency] in praising the action but financial industry leaders expressed doubt that the several actions would produce any major change in the overall housing picture this year."

For the most part, home builders themselves last month were conservative indeed in their references to 1958 business.

(Continued on page 384)



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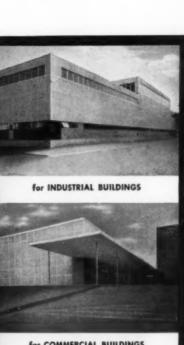
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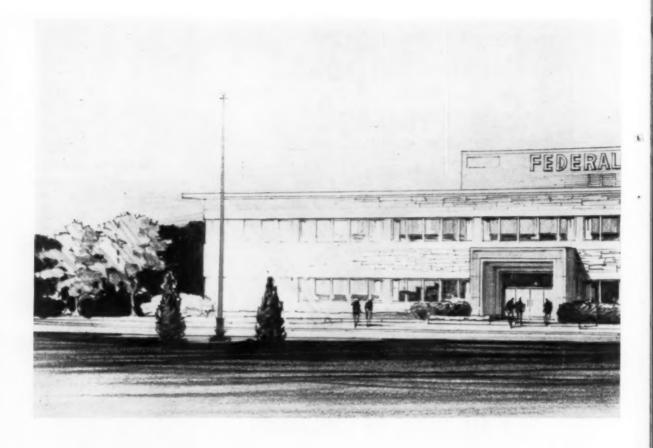


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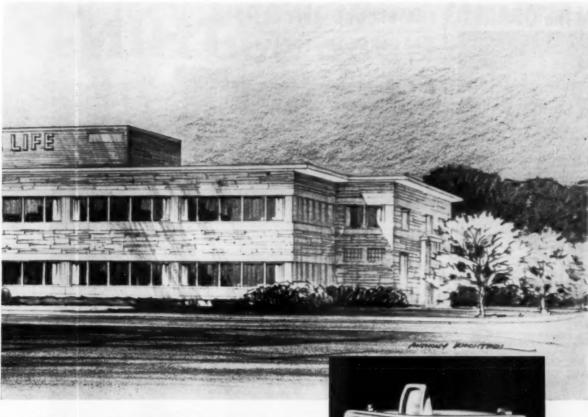


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Federal Life Insurance Company's new home office, Chicago

Architects: Childs & Smith

General Contractor: Gerhardt F. Meyne Co. Plumbing Contractor: Jacob G. Weber Co.



Reflecting the solidity and dignity of the company it houses, the new Federal Life Insurance Building is designed and built to endure. Fireproof, it's constructed of reinforced concrete with Lannon Stone walls. Long and low, its imposing entrance is of highly polished Cherokee Pink granite. Completing this impression of permanence . . . thick, tempered glass doors lead into the vestibule. Unusually impressive, the lobby is dominated by a stairway with graceful aluminum and etched glass balustrade. Outside the ground floor cafeteria is a large terrace, beautifully landscaped. And, quite naturally, this important new building lavished with every modern convenience—including Westinghouse Water Coolers for the constant refreshment of everyone.

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## THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 380)

#### CY SILLING FIRST HEAD OF MODULAR STANDARDS GROUP

The newly organized Modular Building Standards Association has elected Cyrus E. Silling, F.A.I.A., Charleston, W. Va., as its first president.

Other officers named at an organization session in August were James E. Coombs, contractor of Morgantown, W. Va., first vice president; M. Edwin Green, F.A.I.A., Harrisburg, Pa., second vice-president; H. D. Stewart, Lancaster, Pa., secretary; and Martin Bartling, Knoxville, Tenn., treasurer.

Membership in the nonprofit organization is open to any interested individual, association or group. Dues are \$300 annually for sustaining members, and \$10 for associate members such as stu-

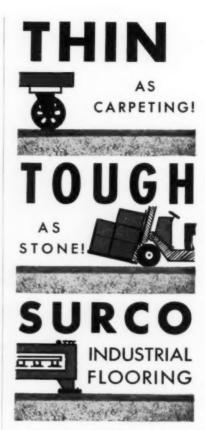
Sponsors are the Producers' Council, Inc., the American Institute of Architects, the Associated General Contractors of America, Inc., and the National Association of Home Builders, Each of these organizations has pledged \$2000 per year for each of three years.

#### NEW UNIT ESTABLISHED AS AID FOR REHABILITATION

The Urban Renewal Administration, getting up a good head of steam after months of low activity that drew sharp criticism from many corners, has established a Rehabilitation and Conservation Branch within its structure. This will be headed by Henry E. Price, Aiken, S. C., as director.

"The new activity was created because of the increasing importance of neighborhood rehabilitation to the urban renewal program," explained URA Commissioner Richard L. Steiner. The agency's records show that 82 urban renewal projects involving substantial rehabilitation had been approved for Federal aid at the end of 1956. There were only nine in this category at the end of 1955.

"This reflects the momentum being achieved under the broadened provisions of the Housing Act of 1954," Commissioner Steiner said. "Based on recommendations of the President's Advisory Committee on Government Housing Policies and Programs, this legislation made neighborhood rehabilitation and conservation eligible for Federal financial assistance. Previously, such assistance had been limited to slum clearance and redevelopment."



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## THE RECORD REPORTS

### WASHINGTON REPORT

(Continued from page 32)

In all, it would result in the addition of 44,930 sq ft of primary and secondary space, plus footage for circulation and mechanical equipment.

Included here is a proposal to remove the sandstone facing from the west central portion of the building, replacing it with marble. This would cost another \$4,065,000. And transportation terminals at the Capitol for the new Senate and House office building subways add \$4,025,000.

Other Scheme B expansions call for a four-level underground garage to house 19,000 cars under the east plaza, vehicular tunnels entering from north, south, and west (cost of this improvement is placed at \$41,970,000), and pedestrian tunnels connecting the Capitol with the Supreme Court building and the Library of Congress, costing \$960,000.

Scheme C includes all the proposals in Scheme B plus additions to both east and west sides of the building to provide the 139,250 sq ft of added space presently required. The building as it now stands contains approximately 235,000 sq ft.

There have been no additions to the structure since the west terraces were built in 1884-1892. Here the Stewart report comments: "With the vast growth that has occurred in the nation, the national Capitol, and the work of the Congress since that time, adequate relief from existing deficiencies in office, committee and other facilities cannot be provided simply through the extension of the East front."

Extension of the west front would make that face one massive block, eliminating the present setbacks near the center. This modification of the west portion would provide 55 more office rooms and eight committee rooms with anterooms or in lieu of the latter, 79 office rooms; two document rooms, seven storage rooms and larger accommodations for the Senate library and for Senate and House restaurants.

Altogether, with east and west extensions, Scheme C would provide a total of 133 office rooms if the eight committee rooms were excluded.

Total estimated cost of the 1905 architectural plan modified to include additional improvements at the east side only is \$61,120,000. Cost of the early plan modified to include additional improvements at both east and west sides is \$75,275,000.

(Continued on page 392)

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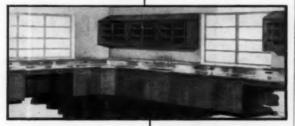
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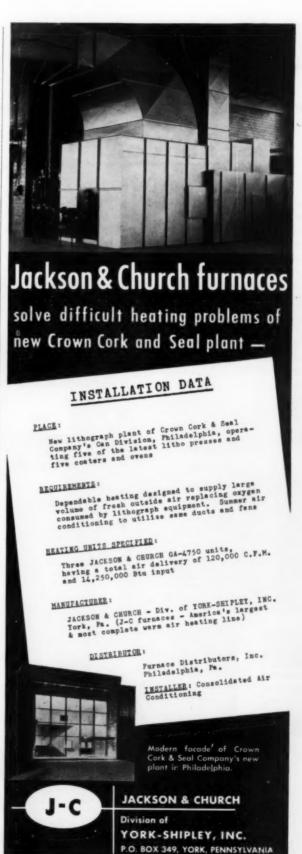
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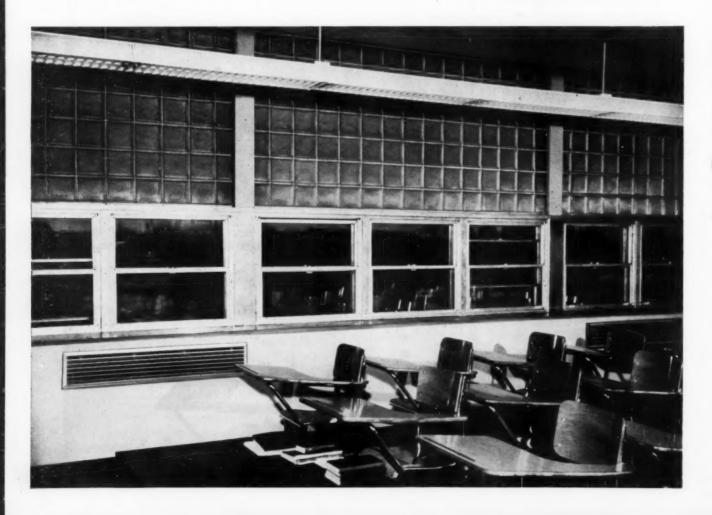


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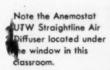




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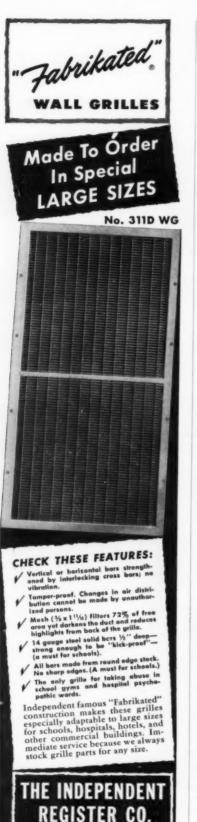


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## THE RECORD REPORTS WASHINGTON REPORT

(Continued from page 388)

Also recommended in the Stewart report was construction of an underground vault to house a communications center, underpinning of the Capitol itself, repairs to the dome, replacement of lighting fixtures and wiring. The accumulated cost of all this work plus fees, administrative and contingent expenses, as yet uncomputed, is placed roughly at \$110 million.

The report had this to say about the function of the architects: "When the Architect of the Capitol engaged the services of the advisory group of architects and of the associate architects and engineers, he emphasized that the individual thinking of each architect and engineer was needed in studying the most effective manner in which to accomplish the proposed extension of the Capitol as directed by the Congress, and that there would be no restrictions imposed on their approach in attaining such accomplishment." His report maintained that the recommendations were the work of men "dedicated to the preservation of the architectural dignity and majesty of the United States Capitol, while carrying out their commission to accomplish authorized changes and improvements in a manner to serve effectively the needs of the Congress, now and in the future '

The commission did not act on the report when it convened on the final day of the first session of the 85th Congress. The next step will be the issuance of directives by the Commission to the Architect of the Capitol.

Congress already has appropriated \$17 million for extension of the Capitol. Only \$408,455 of this has been spent with \$1,752,971 in outstanding obligations. This left \$14,838,574 available for further obligation as of July 1.

Mr. Stewart emphasized that prelimnary drawings already have been completed on the proposed improvements, "making a record for posterity." Among the tasks for the associates in the project was that of making detailed measurements of the central portion of the Capitol. From these measured drawings were prepared, for the purpose of developing accurate information with respect to room sizes, wall thicknesses, elevation of floors etc. This information was not available from older drawings in the Architect's office.



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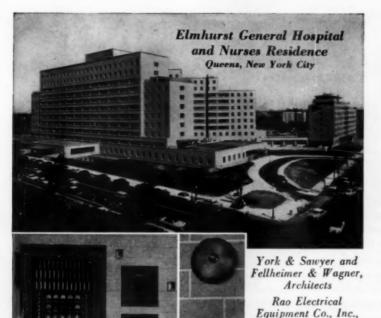


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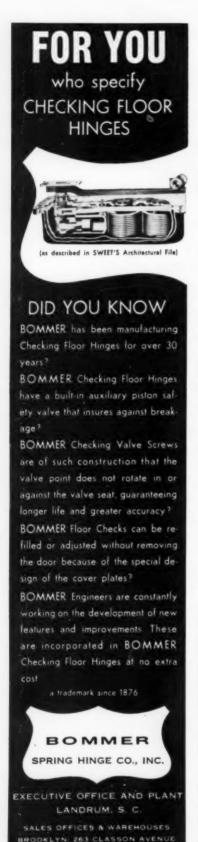
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#### REQUIRED READING

(Continued from page 62)

#### GREEK ARCHITECTURE

Greek Architecture. By A. W. Lawrence. The Pelican History of Art. Penguin Books (Baltimore, Md.), 1957. xxxiv, 327 pp. text, 152 pp. plates, \$12.50.

This handsome volume marks the quarter point in the monumental Pelican History of Art, eventually to comprise forty-eight volumes (AR, October 1953).

Professor Lawrence, for many years lecturer in Greek architecture at Cambridge, has designed his book to supplement, not replace, the standard textbooks of Dinsmoor and Robertson. He therefore gives much space to pre-Hellenic building, and in his treatment of the classic period he emphasizes its less distinguished aspects and its humbler types of structures. The result is an excellent work on the whole field, particularly valuable to those interested in very early, Cretan, and Mycenean architecture. The many drawings and photographic plates are outstanding in their quality. P.C.F.

## Technical References

. . . General Construction Costs, by Louis Dallavia, provides a method for estimating all direct production costs in earthwork, reinforced concrete work, structural steel work, masonry, and carpentry. Calculations are based on a given system of tables in which local wage scales and conditions are entered, thus taking local variables into account and making the system applicable for any time or place. 197 pp., \$8.50. F. W. Dodge Corp., 119 W. 40th, N. Y. C. 18, N. Y.

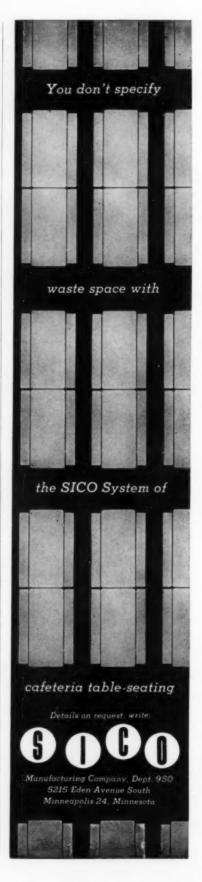
#### MECHANICAL VIBRATIONS

This textbook by Bernard Morrill, Associate Professor of Mechanical Engineering at Swarthmore College, is designed to present the basic elementary vibration theory in a manner sufficiently rigorous so that the student will extend himself to master the mathematical techniques which will serve him as a useful tool in his further studies. 262 pp., \$6.50. The Ronald Press Company, 15 E. 26th St., N. Y. C. 10, N. Y.

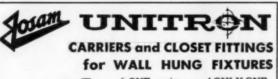
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(Continued on page 400)









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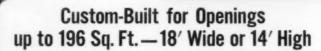
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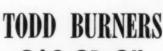
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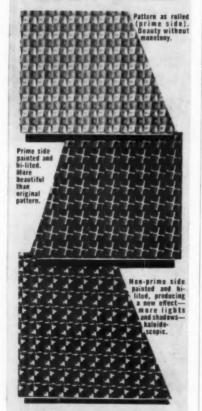
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(Continued from page 396)

walls. Well illustrated, the book emphasizes principles and offers solutions to all the common cases and most of the special conditions encountered in this structural engineering problem. Format is organized in such a way as to enable the reader to consult the portion dealing with his specific problem. 534 pp., \$11.50. John Wiley & Sons, Inc., 440 Fourth Ave., N. Y. C. 16, N. Y.

#### AMERICAN CIVIL ENGINEERING

. . . Practice, by Robert W. Abbett, is available in three volumes and replaces the American Civil Engineers' Handbook which was first published in 1910. This new set of volumes presents fundamental principles, procedures, and data of modern civil engineering in concise form for reference purposes with illustrations from current practice. John Wiley & Sons, Inc., 440 Fourth Ave., N. Y. C. 16, N. Y.

#### WINDOWS AND GLASS

. . . in the Exterior of Buildings records opinions of building experts on pros and cons of the growing use of glass in all types of construction, as reported at November's Building Research Institute conference. Illustrated, 176 pp. \$5. Publications Office, National Academy of Sciences, 2101 Constitution Ave., Washington 25, D. C.

#### SHEARING STRENGTH

... of Reinforced Concrete Slabs reports methods and results of experimental work on the shearing strength of reinforced concrete slabs subjected to a centrally located, concentrated load. Bulletin No. 9. 50¢. The Engineering Foundation, 29 West 39th St., New York 18, N. Y.

#### THERMAL INSULATING MATERIALS

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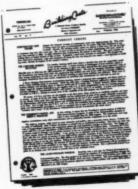
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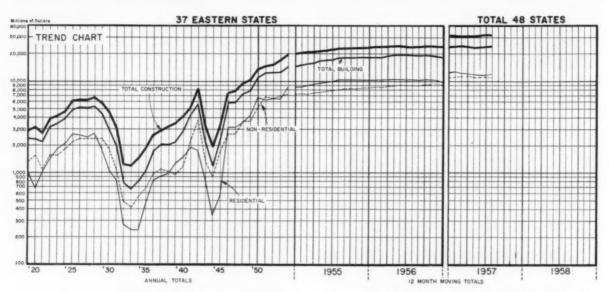
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#### THE RECORD REPORTS: CURRENT TRENDS IN CONSTRUCTION

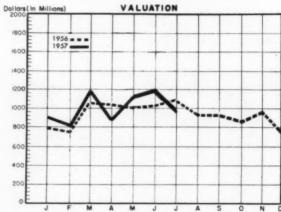


Charts by Dodge Statistical Research Service

#### RESIDENTIAL UP, NONRESIDENTIAL OFF

It was the residential category that held the construction total for July to a mere four per cent decline compared with July 1956 and the cumulative total for the first seven months of 1957 at a level three per cent ahead of the 1956 period. As reported by F. W. Dodge Corporation, the total of July contracts for future construction, at \$2,900,681,000, reflected an 11 per cent decline from July 1956 in the nonresidential total of \$960,658,000 and an 18 per cent decline in the heavy engineering total of \$653,086,000 but a 13 per cent increase in the residential total of \$1,286,937,000. Within the residential category, it was multi-unit dwellings that accounted for the major part of the increase; contracts for one- and two-family houses were up three per cent. For seven months of 1957, the total stood at \$19,858,686,000, with the nonresidential category at \$6,931,405,000 up three per cent; residential at \$7,-770,251,000 down two per cent; heavy engineering at \$5,-157,030,000 up 14 per cent.

#### NONRESIDENTIAL BUILDING



#### Source: F. W. Dodge Corporation NONRESIDENTIAL BUILDING

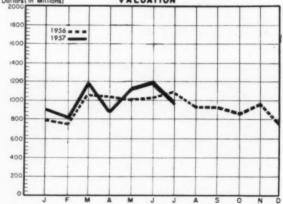
Construction Contracts—37 Eastern States Valuation (in thousands of dollars)

Year	Annual	Monthly	V	Annual	Monthly	
		Average	Year	Total	Average	
1929	2,425,308	202,109	1951	6,822,513	568,543	
1935	680,976	56,748	1952	6,695,064	557,922	
1940	1,294,640	107,887	1953	6,955,866	579,656	
1943	1,424,260	118,688	1954	7,110,348	592,529	
1947	2,715,664	226,305	1955	8,496,829	708,069	
1950	5,181,595	431,800	1956	9,005,948	750,496	

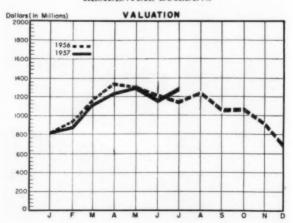
#### **Monthly Totals**

	19	956				1957	
Jan.	661,275	July	847,332	Jan.	762,081	July	745,723
Feb.	630,054	Aug.	746,787	Feb.	686,843	7-mos	-5,601,698
Mar.	881,111	Sept.	775,869	Mar.	916,052		
Apr.	821,549	Oct.	675,414	Apr.	625,191		
May	819,421	Nov.	729,642	May	866,168		

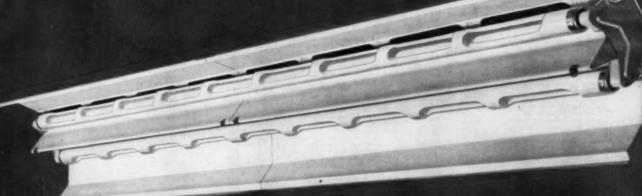
794,272 Dec. 623,222 June 999,640



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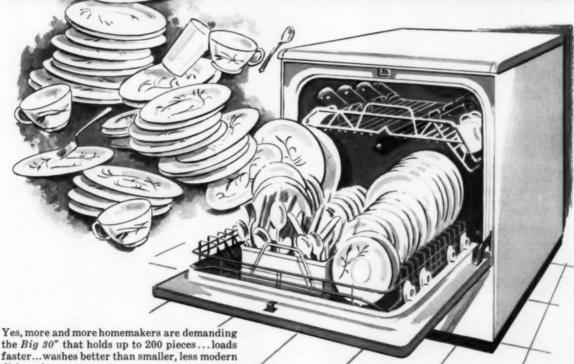
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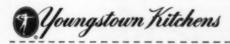
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#### Fluorescent Lamp Ballast Cross Reference Guide

This helpful guide lists many popular ballasts by catalog number and the ADVANCE ballast that should be used whenever ballast replacement becomes necessary. It is an invaluable reference chart that saves time and money for all users of fluorescent lamp ballasts.

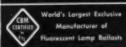
#### Service-Stocking Distributor 'Plan and List of Distributors

This is a six-page color brochure that lists, by city and state, more than 550 distributors who carry a stock of ADVANCE Fluorescent Lamp Ballasts, to provide immediate replacement service for ballasts of any make that become inoperative.

You may receive a copy of one or all of these brochures by writing ADVANCE TRANSFORMER COMPANY, Marketing Division, 2950 North Western Avenue, Chicago 18, Illinois.

The Heart of the Lighting Industry





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